

Video Cassette Recorder

Operating Instructions

Video8

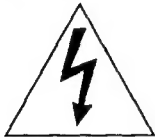
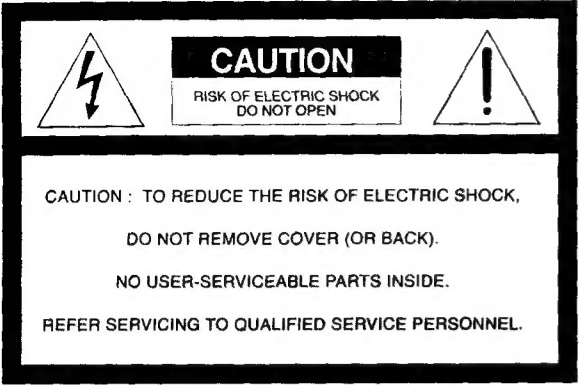
VCR *plus+*

EV-A60

© 1995 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

To prevent electric shock, do not use this polarized AC plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Precautions

Safety

- Operate the unit only on 120 V AC, 60 Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your Sony dealer.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug, never by the cord.

Installing

- Allow adequate air circulation to prevent internal heat buildup.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.

- Do not place heavy objects on the unit.
- If the unit is brought directly from a cold to a warm location, moisture may condense inside the VCR and cause damage to the video head and tape. When you first install the unit, or when you move it from a cold to a warm location, wait for about one hour before operating the unit.

Information

For customers in the USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Caution

Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization from the cable television transmission and/or program owner.

Owner's record

The model number is located at the rear and front of the unit and the serial number on the top. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

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back cover	Quick reference to using the VCR

Welcome!

Thank you for purchasing a Sony Video Cassette Recorder (VCR). Here are some of the features you'll enjoy with your VCR:

- Advanced editing function that lets you preset 8 events to be edited
- Flying erase head for smooth transfer between inserted portions
- VCR Plus+* system that lets you quickly and easily preset the VCR to record programs

* VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

Compatible color systems

This VCR is designed to play back using the NTSC color system. Playback of video sources based on other color systems cannot be guaranteed.

Compatible video systems

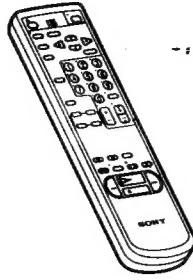
- This VCR uses the 8 mm video format.
- This VCR plays back in the SP mode (approximately 19/32 inches/second) and the LP mode (approximately 5/16 inches/second). The quality of the recorded picture in the LP mode, however, will not be as good as that in the SP mode.
It can record only in the SP mode.
- This VCR does not record in the Hi8 video system, nor does this VCR play back a tape recorded in the Hi8 video system.
- PCM (Pulse Code Modulation) recording/playback, that is, digital recording/playback, is not possible with this unit. The PCM sound recorded on another VCR cannot be played back on this VCR.

Getting started

Step 1: Unpacking

Check that you have the following items:

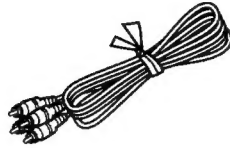
- Remote commander



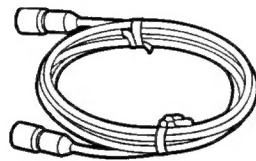
- Size AA (R6) batteries



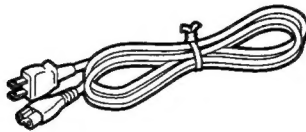
- Audio/video cable
(2-phono plug to 2-phono plug)



- 75-ohm coaxial cable with
F-type connectors



- AC power cord



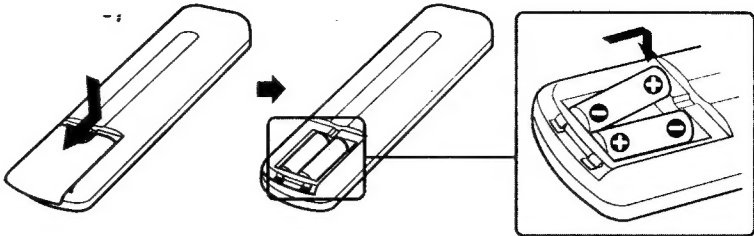
Step 2: Setting up the remote commander

Notes

- With normal use, the batteries should last for approximately three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

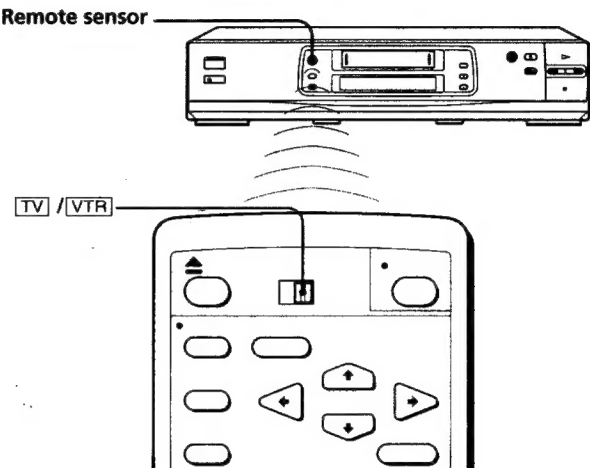
Inserting the batteries

Insert two size AA (R6) batteries (supplied) matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your TV.



To operate	Set TV / VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Step 3: Hookups

Caution
Connections between the VCR's VHF/UHF connector and the antenna terminals of the TV receiver should be made only as shown in the following instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the VCR to an antenna or make simultaneous (parallel) antenna and VCR connections at the antenna terminals of your receiver.

Note to CATV system installer
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Selecting the best hookup option

Before you can use your VCR for the first time, you need to connect it to your TV and set it up to receive programs for viewing and recording. This section explains how to hook up and set up your VCR so that you can start enjoying it right away. There are, however, many types of TVs available and many ways in which your TV can be hooked up. For these reasons, this manual describes several ways your VCR can be connected.

To hook up your VCR so that it works best for you, first scan through the table below. Then use the accompanying diagrams and procedures on the following pages to set up your VCR.

If you have	Use	Refer to
TV that has audio/video inputs	Audio/video (A/V) hookup, then follow one of the hookups below.	Page 8
No cable box or cable box with only a few scrambled channels	Hookup 1	Page 10
Antenna only, no cable TV	Hookup 2	Page 12
Cable box with many scrambled channels	Hookup 3	Page 14
Cable box with only a few scrambled channels, using an A/B switch	Hookup 4	Page 16

After you've completed the connections, follow the instructions for setup including VCR Plus+ setup. During setup, if you need more details of the procedure described, page numbers are provided where you can find complete, step-by-step instructions.

After you've completed the setup, you're ready to use your VCR. Procedures differ depending on the hookup you used. For an overview, refer to "Quick reference to using the VCR" on the back cover.

Before you get started

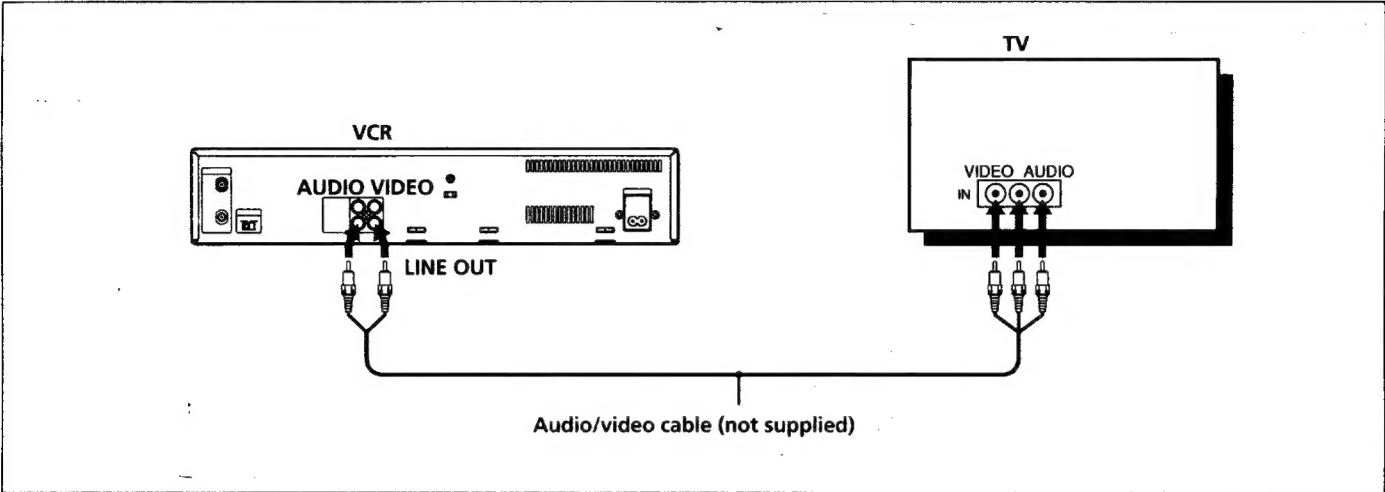
- Turn off the power to all equipment.
- Do not connect the AC power cords until all of the connections are completed.
- Be sure you make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, see your nearest Sony dealer or qualified technician.

Audio/video (A/V) hookup

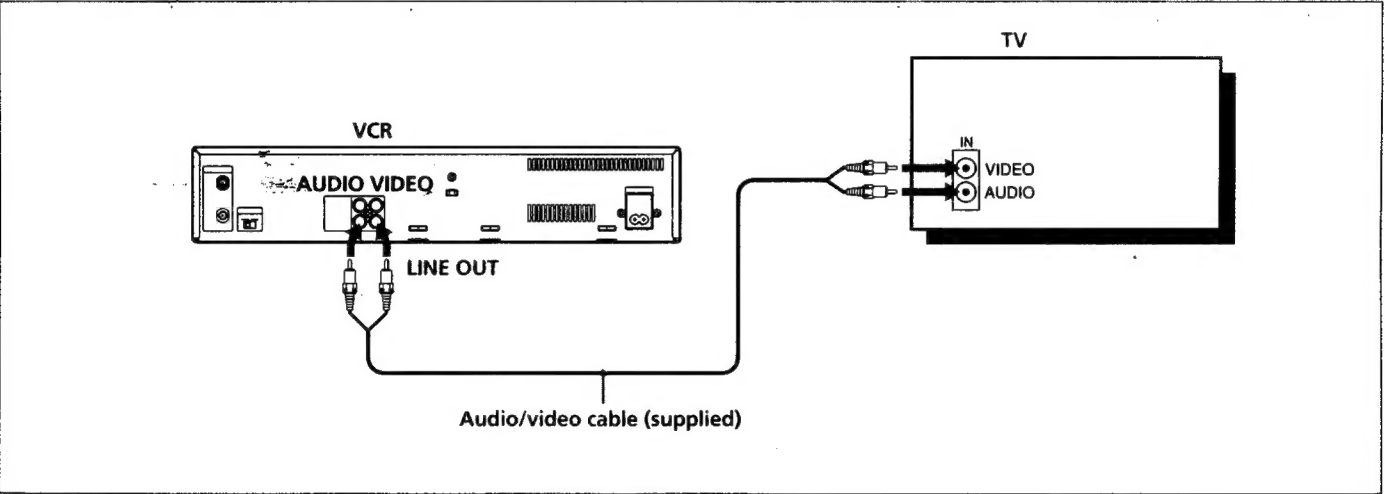
If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookups.

If you're planning to use your VCR only to play back pictures and movies, you're finished setting up the VCR after you've made these connections. If you want to record off-air or off your cable TV system, complete these connections first, and then go to the following pages for antenna or cable hookups.

A Use this hookup if your TV has stereo jacks



B Use this hookup if your TV doesn't have stereo jacks

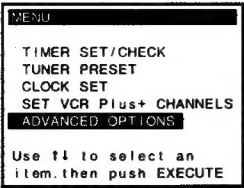


AV hookup: VCR setup

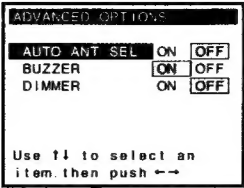
After you've connected your TV and completed antenna or cable hookup, use the following procedure to set up the VCR.

Getting Started

Press MENU and select
ADVANCED OPTIONS.



Set AUTO ANT SEL to
OFF and press EXECUTE.



For details, see page 25.

Hookup 1

No cable box or Cable box with only a few scrambled channels

Recommended use

Use this hookup if you do not have a cable box. Also use this hookup if your cable system scrambles only a few channels.

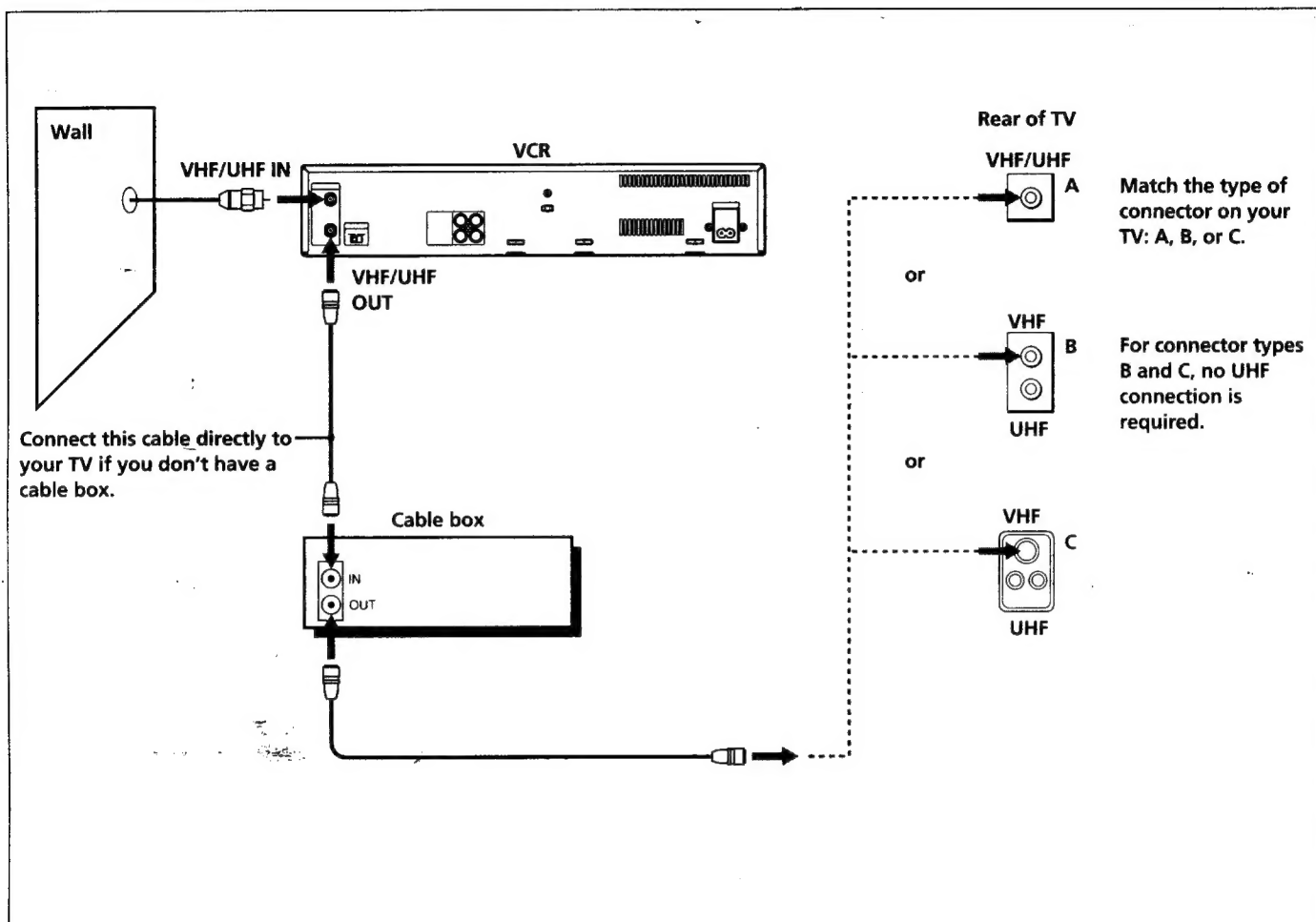
What you can and can't do with this hookup

What you can do

- Record any unscrambled channel by selecting the channel on the VCR

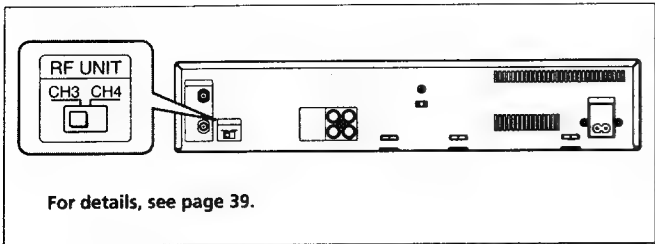
What you can't do

- Record scrambled channels that require a cable box



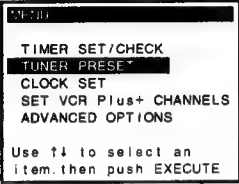
Hookup 1: VCR setup

- 1 Set the RF UNIT switch to CH 3 (channel 3) or CH 4 (channel 4), whichever channel is not used in your area. If both are used, set the switch to either channel. If you made A/V connections (from page 8), you can skip this step.



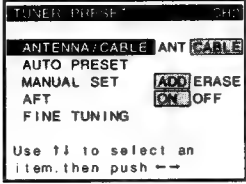
- 2 Set ANTENNA/CABLE to CABLE:

Press MENU and select TUNER PRESET.



Use **1** to select an item, then push EXECUTE

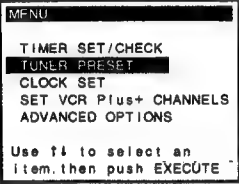
Set ANTENNA/CABLE to CABLE and press EXECUTE.



Use **1** to select an item, then push --

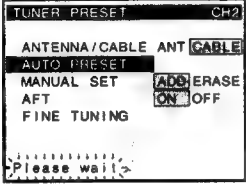
- 3 Preset the channels into the VCR:

Press MENU and select TUNER PRESET.



Use **1** to select an item, then push EXECUTE

Select AUTO PRESET and press EXECUTE.

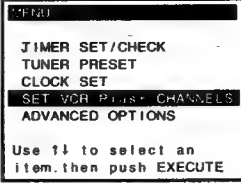


Please wait

Hookup 1: VCR Plus+ channel setup

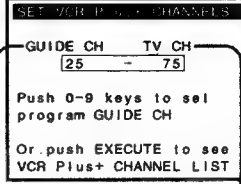
- 1 Find the VCR Plus+ Channel Listing in your program guide. For details on the VCR Plus+ Channel Listing, see page 23.
- 2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:

Press MENU and select SET VCR Plus+ CHANNELS.



Use **1** to select an item, then push EXECUTE

Enter the program guide channel, then the channel you use on your TV



Push 0-9 keys to set program GUIDE CH
Or, push EXECUTE to see VCR Plus+ CHANNEL LIST

Program guide channel

Your actual TV channel

Press EXECUTE

You are now ready to use your VCR

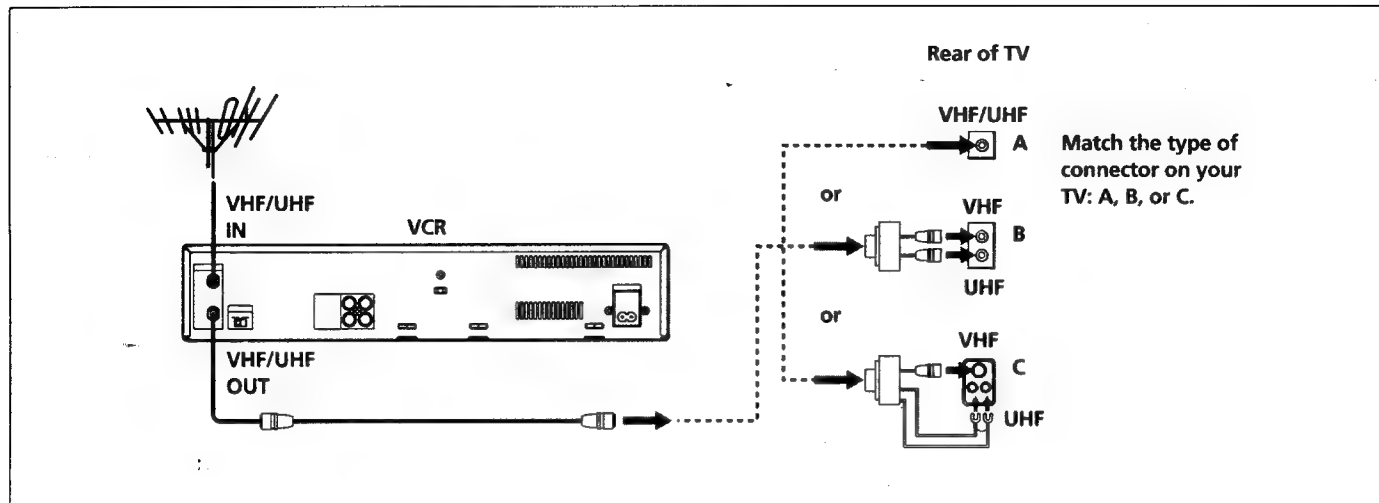
A Quick reference to operations is provided on the back cover to help you quickly enjoy the basic functions. These procedures differ slightly depending on the hookup used. Make a note of which hookup you use (Hookup 1) so that you can always follow the correct instructions.

Getting Started

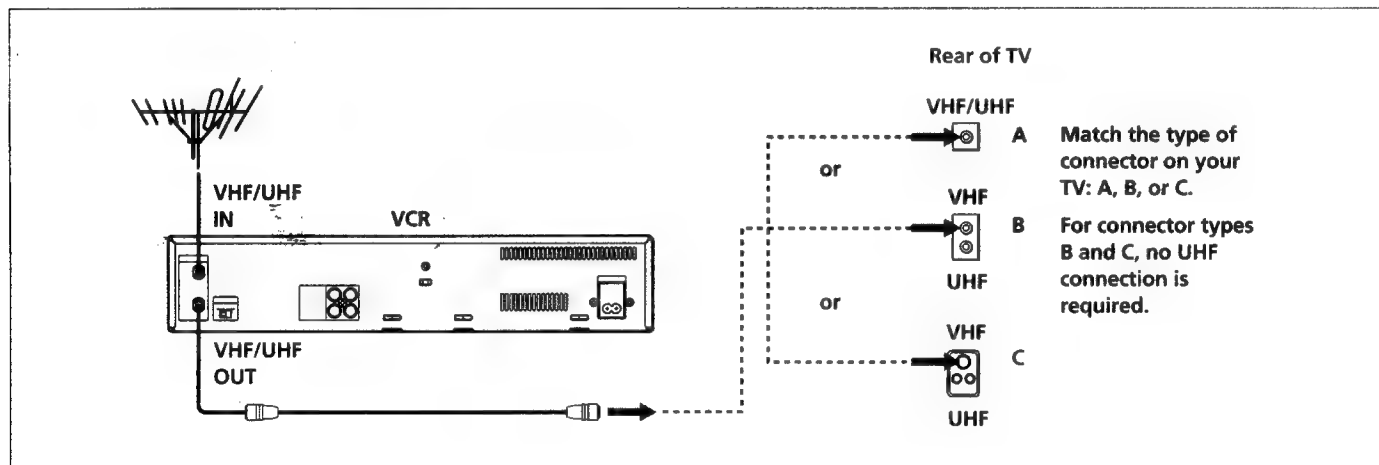
Antenna hookup

A Use this hookup if you're using:

- VHF/UHF antenna (you get channels 2-13 and channels 14 and higher)
- UHF-only antenna (you get channels 14 and higher)
- separate VHF and UHF antennas



B Use this hookup if you're using a VHF-only antenna (you get channels 2-13 only)

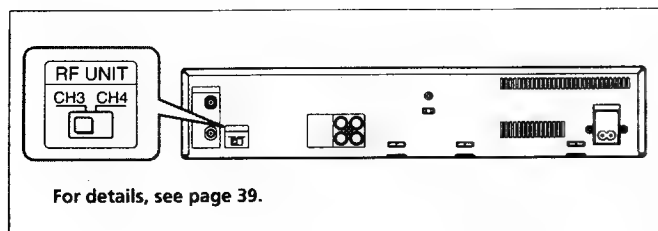


If you cannot connect your antenna cable to the VCR directly

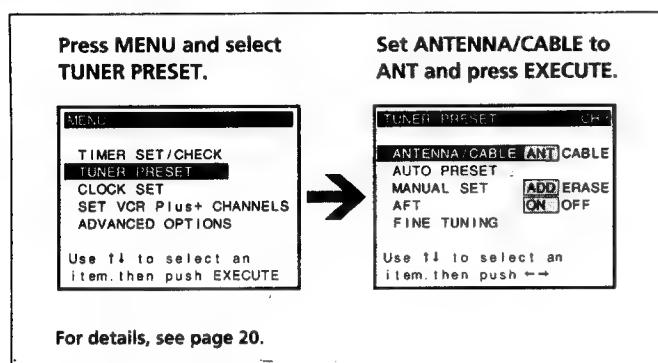
If your antenna cable is a flat cable (300-ohm twin lead cable), attach an external antenna connector (not supplied) so that you can connect the cable to the VHF/UHF IN connector. If you have separate cables for VHF and UHF antennas, you may use a U/V band mixer (not supplied). For details, see page 39.

Hookup 2: VCR setup

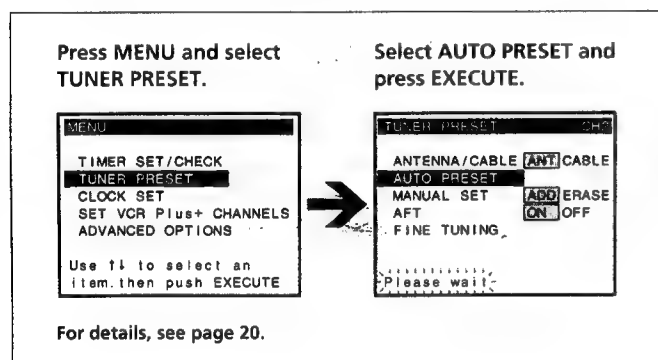
- 1 Set the RF UNIT switch to CH 3 (channel 3) or CH 4 (channel 4), whichever channel is not used in your area. If both are used, set the switch to either channel. If you made A/V connections (from page 8), you can skip this step.



- 2 Set ANTENNA/CABLE to ANT:

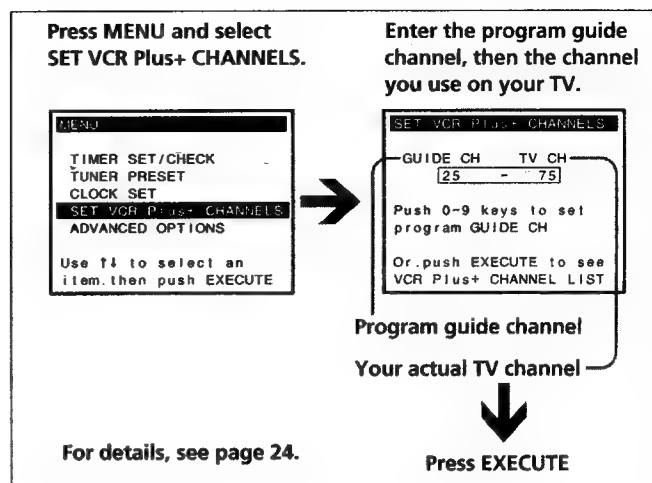


- 3 Preset the channels into the VCR:



Hookup 1: VCR Plus+ channel setup

- 1 Find the VCR Plus+ Channel Listing in your program guide. For details on the VCR Plus+ Channel Listing, see page 23.
- 2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:



You are now ready to use your VCR

A Quick reference to operations is provided on the back cover to help you quickly enjoy the basic functions. These procedures differ slightly depending on the hookup used. Make a note of which hookup you use (Hookup 2) so that you can always follow the correct instructions.

Hookup 3

Cable box with many scrambled channels

Recommended use

Use this hookup if your cable system scrambles all, or most channels.

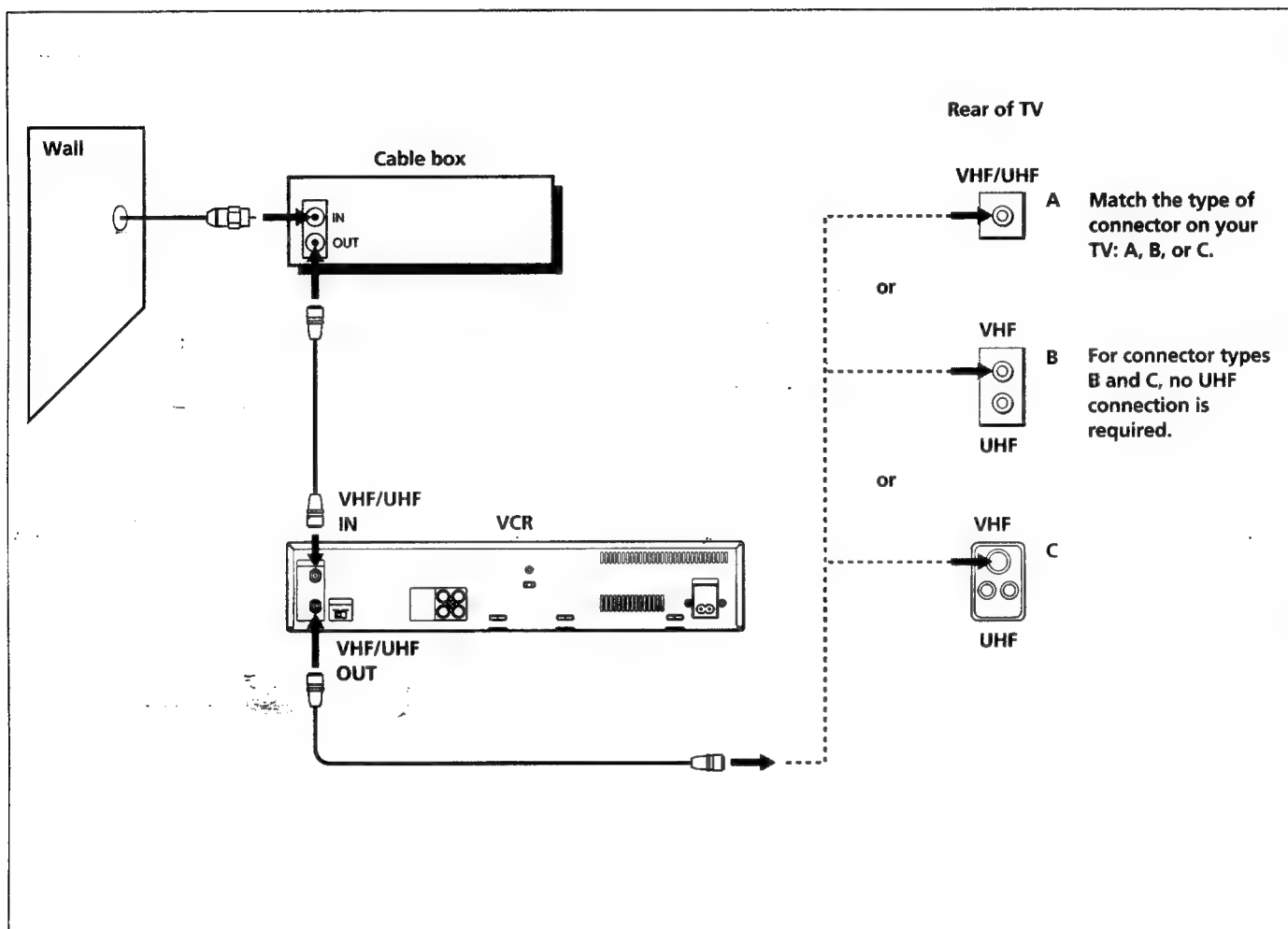
What you can and can't do with this hookup

What you *can* do

- Record any channel by selecting the channel on the cable box

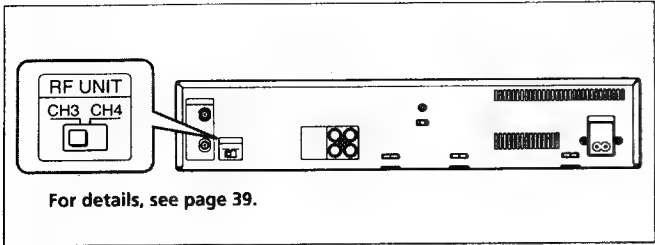
What you *can't* do

- Record with the cable box turned off
- Record one channel while watching another channel
- Record by selecting channels directly with the VCR



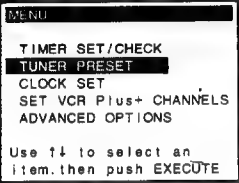
Hookup 3: VCR setup

- 1 Set the RF UNIT switch to CH 3 (channel 3) or CH 4 (channel 4), whichever channel is not used in your area. If both are used, set the switch to either channel. If you made A/V connections (from page 8), you can skip this step.



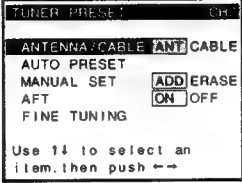
- 2 Turn on your cable box.
- 3 Set ANTENNA/CABLE to ANT:

Press MENU and select TUNER PRESET.



Use **↑↓** to select an item, then push EXECUTE

Set ANTENNA/CABLE to ANT and press EXECUTE.

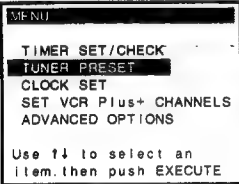


Use **↑↓** to select an item, then push **↵**

For details, see page 20.

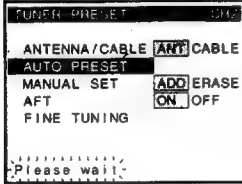
- 4 Preset the channels into the VCR:

Press MENU and select TUNER PRESET.



Use **↑↓** to select an item, then push EXECUTE

Select AUTO PRESET and press EXECUTE.



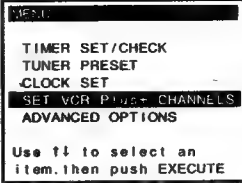
Please wait

For details, see page 20.

Hookup 3: VCR Plus+ channel setup

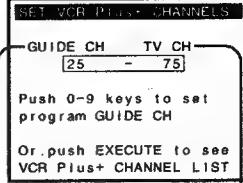
- 1 Find the VCR Plus+ Channel Listing in your program guide. For details on the VCR Plus+ Channel Listing, see page 23.
- 2 Enter all the channels you want to record and the cable box output channel (usually 2, 3, or 4):

Press MENU and select SET VCR Plus+ CHANNELS.



Use **↑↓** to select an item, then push EXECUTE

Enter the program guide channel, then the cable box output channel.



Push 0-9 keys to set program GUIDE CH
Or, push EXECUTE to see VCR Plus+ CHANNEL LIST

Program guide channel
Your cable box channel

Press EXECUTE.

For details, see page 24.

Note

You have to set the channel manually on the cable box for each recording.

You are now ready to use your VCR

A Quick reference to operations is provided on the back cover to help you quickly enjoy the basic functions. These procedures differ slightly depending on the hookup used. Make a note of which hookup you use (Hookup 3) so that you can always follow the correct instructions.

Hookup 4

Cable box with only a few scrambled channels, using an A/B switch

Recommended use

By using an A/B switch (not supplied), this hookup allows you to record both scrambled and unscrambled channels conveniently. With the A/B switch set to position "A," you can record unscrambled channels by selecting channels directly with the VCR. You only use position "B" and the cable box to record a scrambled channel.

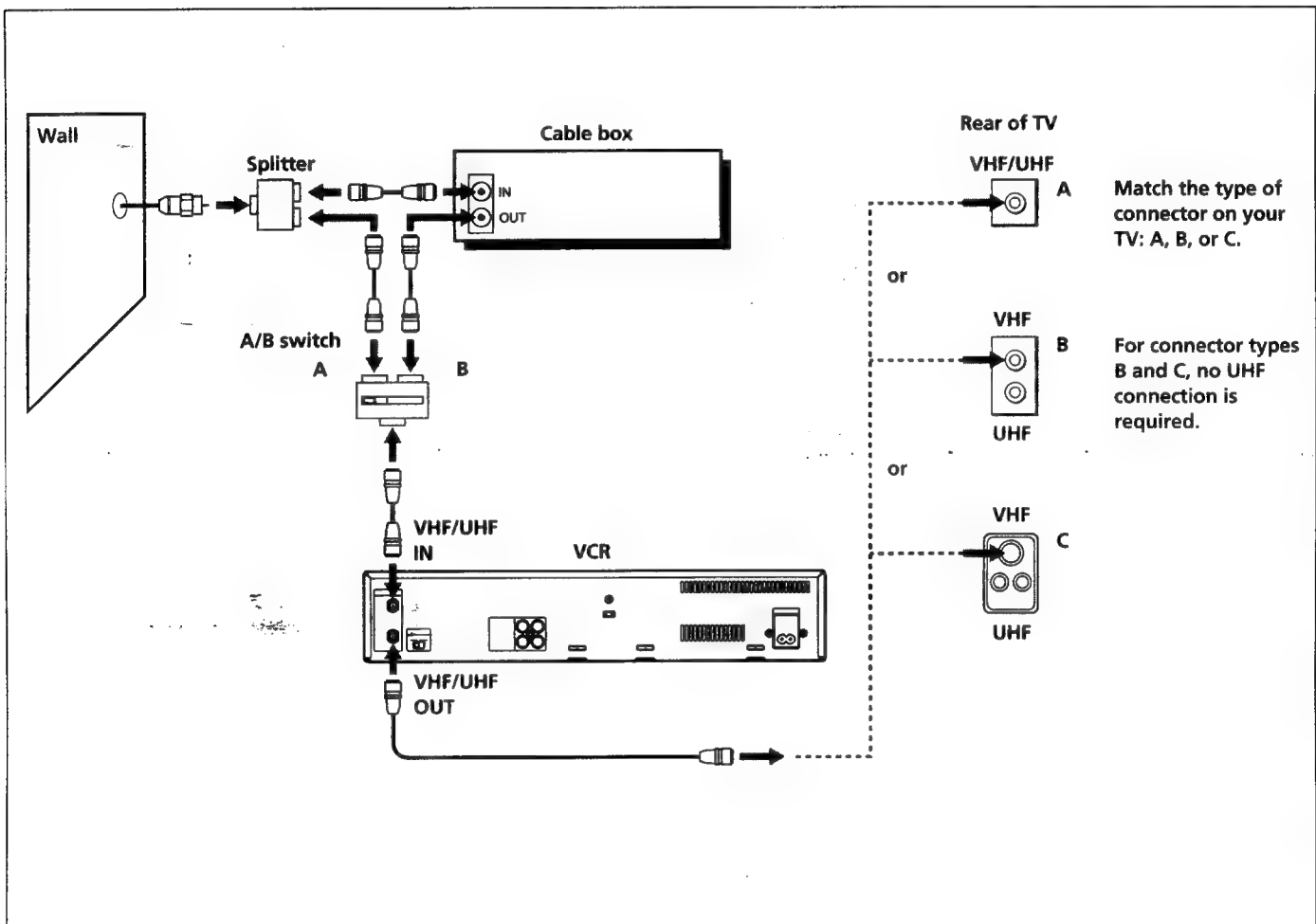
What you can and can't do with this hookup

What you can do

- Record any unscrambled channel by selecting the channel on the VCR (the A/B switch is set to "A")
- Record any scrambled channel by selecting the channel on the cable box (the A/B switch is set to "B")

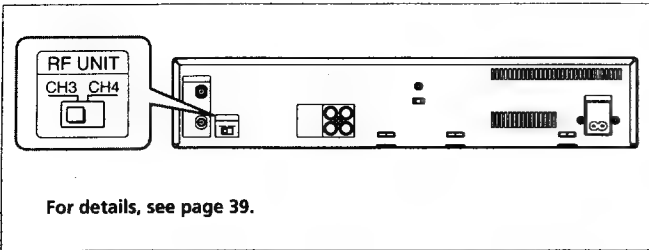
What you can't do

- Record a scrambled channel while watching another channel

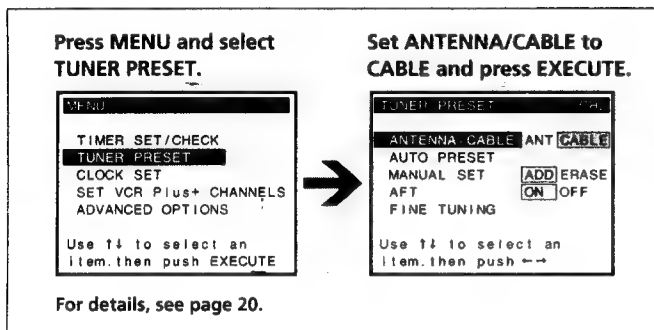


Hookup 4: VCR setup

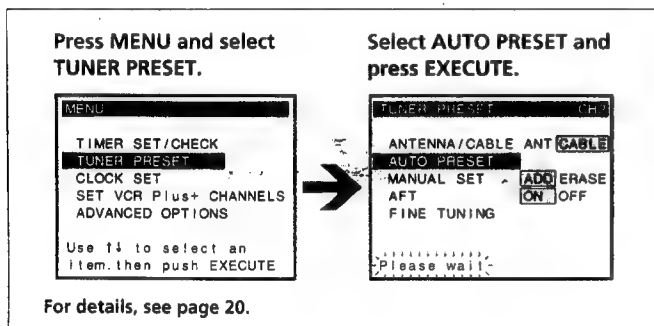
- 1 Set the RF UNIT switch to CH 3 (channel 3) or CH 4 (channel 4), whichever channel is not used in your area. If both are used, set the switch to either channel. If you made A/V connections (from page 8), you can skip this step.



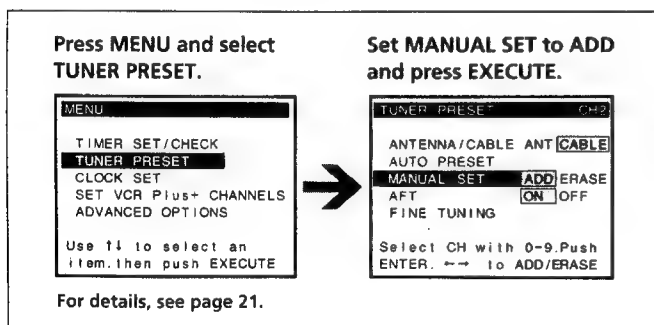
- 2 Set the A/B switch to "A."
- 3 Set ANTENNA/CABLE to CABLE:



- 4 Preset the channels into the VCR:

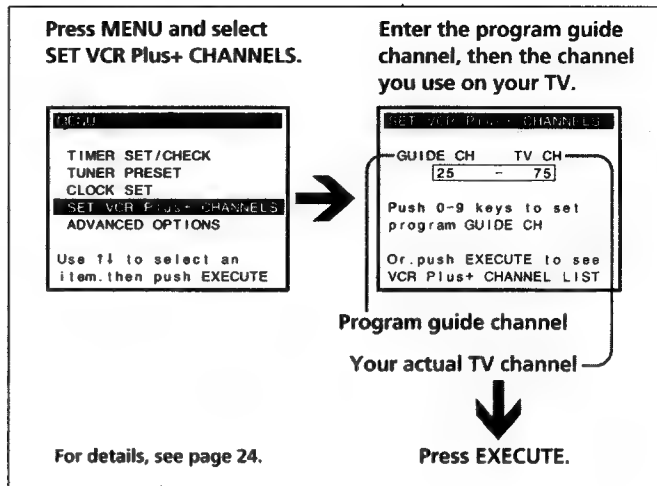


- 5 Preset the cable box output channel (usually 2, 3, or 4):

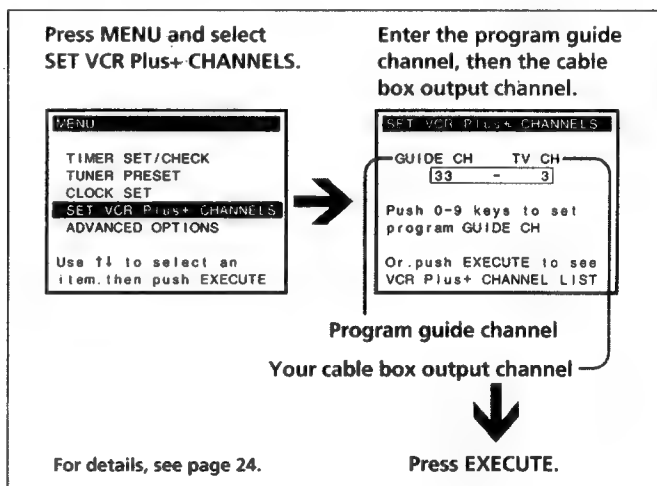


Hookup 4: VCR Plus+ channel setup

- 1 Find the VCR Plus+ Channel Listing in your program guide. For details on the VCR Plus+ Channel listing, see page 23.
- 2 For unscrambled channels, if the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows:



- 3 For scrambled channels, enter all the scrambled channels you want to record and the cable box output channel (usually 2, 3, or 4):



Hookup 4

Cable box with only a few scrambled channels, using an A/B switch (continued)

You are now ready to use your VCR

To play a tape

- 1 Set the TV to channel 3 or 4 (or to video input, if you have made A/V connections).
- 2 Insert a tape and press ▷ PLAY.

To record an unscrambled channel

- 1 Set the A/B switch to "A."
- 2 Select channels on the VCR.

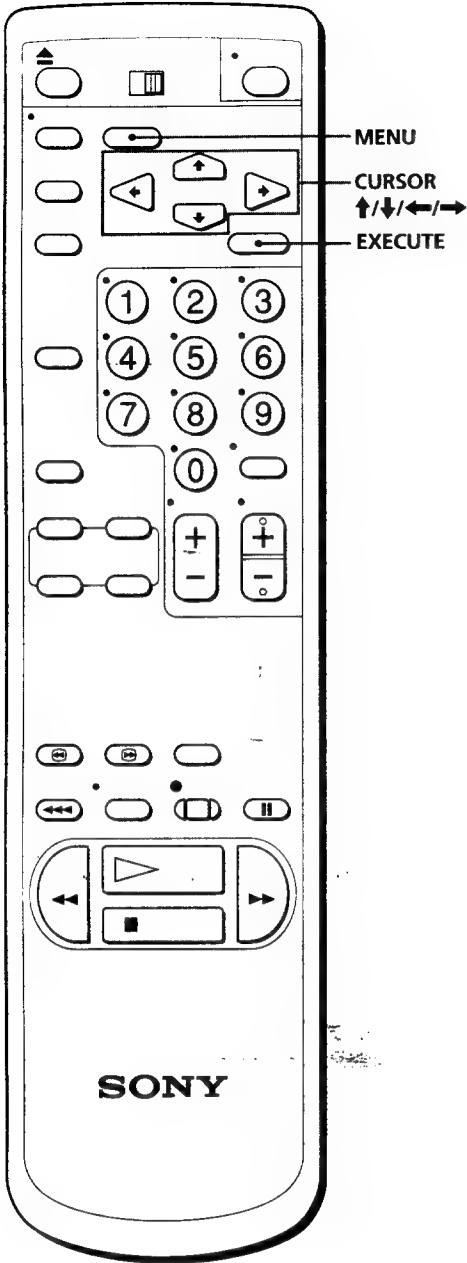
To record a scrambled channel

- 1 Set the A/B switch to "B."
- 2 Select channels on the cable box.

To watch TV

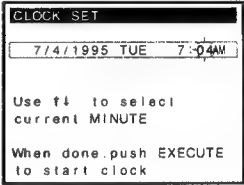
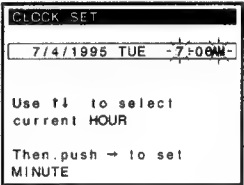
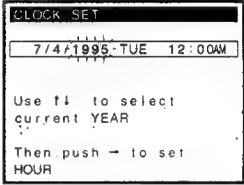
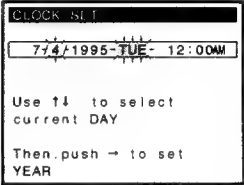
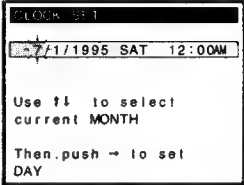
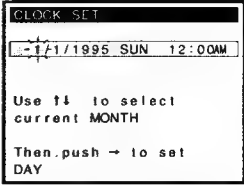
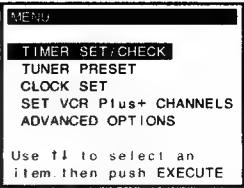
- 1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Set the A/B switch to "B."
- 3 Turn on your cable box.
- 4 Set the TV to the cable box output channel (usually 2, 3, or 4).
- 5 Set the cable box to the channel you want to watch.

Setting the clock



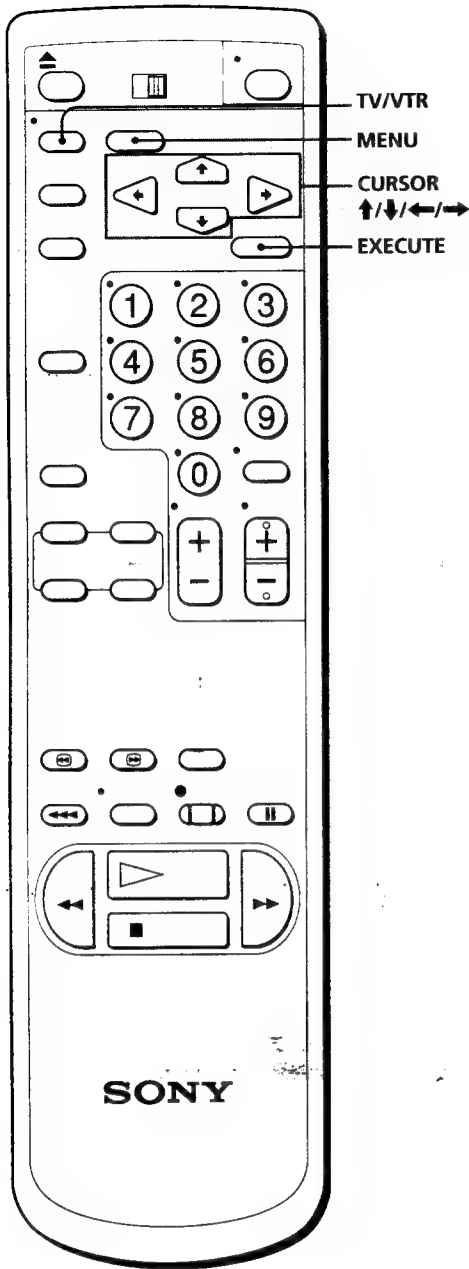
Set the time and date to use the timer feature for recording programs.

- 1 Press MENU.**
The main MENU appears on the TV screen.
- 2 Press the CURSOR (↑/↓) buttons to move the cursor (|) to CLOCK SET, then press EXECUTE.**
The CLOCK SET menu appears on the TV screen and the month is flashed.
- 3 Set the month using the CURSOR (↑/↓) buttons.**
- 4 Press CURSOR → to highlight the day. Set the day using the CURSOR (↑/↓) buttons.**
The day of the week is set automatically.
- 5 Press CURSOR → to highlight the year. Set the year using the CURSOR (↑/↓) buttons.**
- 6 Press CURSOR → to highlight the hour. Set the hour using the CURSOR (↑/↓) buttons.**
- 7 Press CURSOR → to highlight the minutes. Set the minutes using the CURSOR (↑/↓) buttons.**
- 8 Press EXECUTE to start the clock.**



Getting Started

Presetting channels



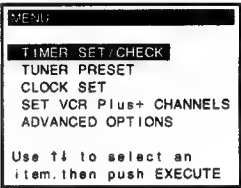
This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69 and unscrambled CATV channels 1 to 125. First, we recommend that you preset the receivable channels in your area using automatic presetting. Then, if there are any unwanted channels, disable them manually. If you have decided which channels you wish to preset, set them directly using manual presetting.

Before you start...

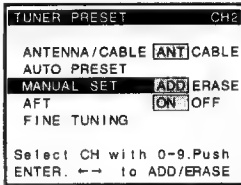
- Turn on the VCR and the TV.
- Set the TV to the VCR channel (channel 3 or 4). If your TV is connected to the VCR using A/V connections, set the TV to video input.
- Press TV/VTR to display the VTR indicator in the display window.

Presetting all receivable channels automatically

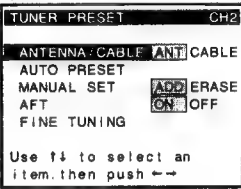
- 1 Press MENU.**
The main MENU appears on the TV screen.



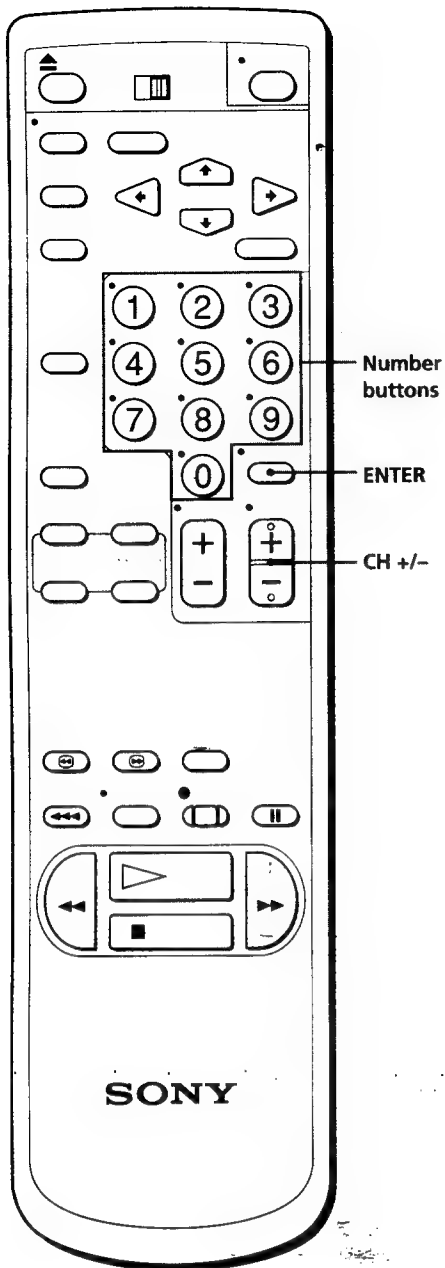
- 2 Press the CURSOR (↑/↓) buttons to move the cursor (█) to TUNER PRESET, then press EXECUTE.**
The TUNER PRESET menu appears on the TV screen.



- 3 Press the CURSOR (↑/↓) buttons to move the cursor (█) to ANTENNA/CABLE.**

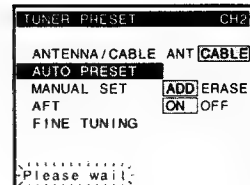


- 4 Select ANT or CABLE using the CURSOR (←/→) buttons:**
- To preset VHF and UHF channels, select ANT.
 - To preset cable TV channels, select CABLE.



5 Press the CURSOR (↑/↓) buttons to move the cursor (█) to **AUTO PRESET**, then press **EXECUTE**.

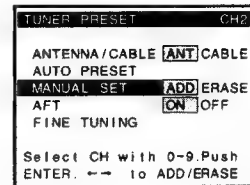
All receivable channels are preset in numerical sequence. When no more receivable channels can be found, presetting stops and the picture from the lowest numbered channel is displayed on the TV screen.



Presetting/disabling channels manually

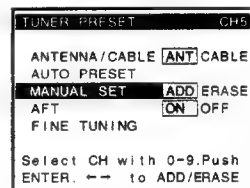
1 Display the **TUNER PRESET** menu.

For instructions, follow steps 1 and 2 in "Presetting all receivable channels automatically" on page 20.



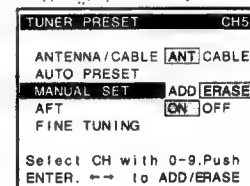
2 Select the channel to preset or disable:

- To preset a channel, enter the channel number by pressing the number buttons then **ENTER**.
- To disable a channel, select the channel number by pressing **CH +/-**.



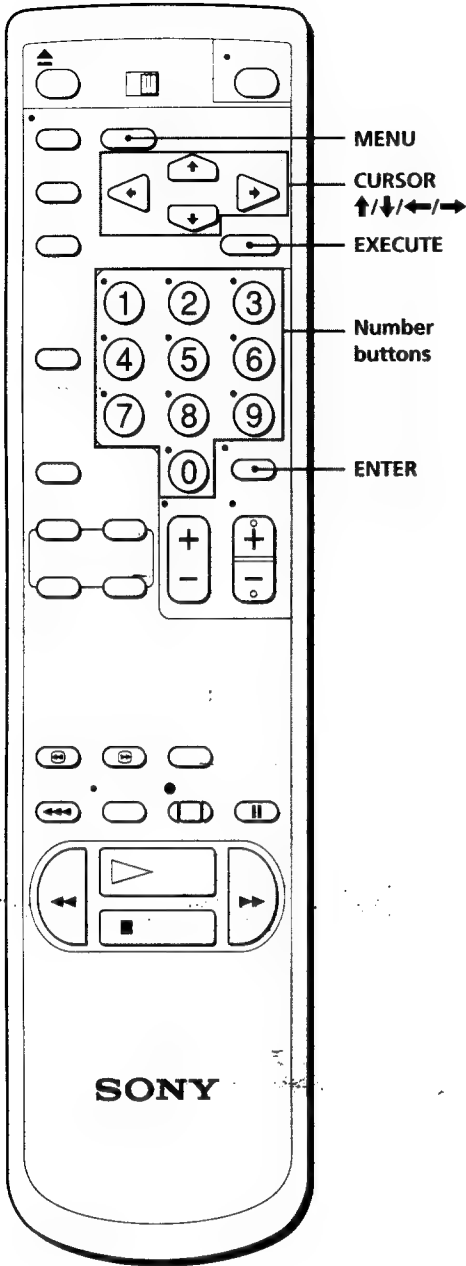
3 Set **MANUAL SET** to **ADD** or **ERASE** using the **CURSOR** (←/→) buttons:

- To preset a channel, select **ADD**.
- To disable a channel, select **ERASE**.



4 Repeat steps 2 and 3 to preset or disable channels as required, then press **EXECUTE**.

Presetting channels
(continued)



Cable TV channel assignment

Cable TV systems use letters or numerals to designate channels. This VCR is designed to correspond with standard cable systems. The chart below shows the channel numbers on this VCR and the corresponding cable TV channels. Note that the channel number assignment shown in the chart may not correspond to the channel number used by your local cable company. Check with your local cable TV company for more information on the available channels.

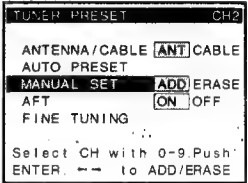
Number on this VCR		1	2	3	...	12	13	14	15	16	17		
Cable TV channel		A-8	2	3	...	12	13	A	B	C	D		
18	19	20	21	22	23	24	25	26	27	28	29	30	31
E	F	G	H	I	J	K	L	M	N	O	P	Q	R
32	33	34	35	36	37	38	...	93	94	95	96	97	98
S	T	U	V	W	W+1	W+2	...	W+57	W+58	A-5	A-4	A-3	A-2
99	100	101	...	124	125								
A-1	W+59	W+60	...	W+83	W+84								

If the picture is not clear

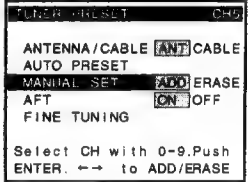
Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture of a channel is not clear, you may also use the manual tuning function.

- 1
- Display the TUNER PRESET menu.**

For instructions, follow steps 1 and 2 in "Presetting all receivable channels automatically" on page 20.

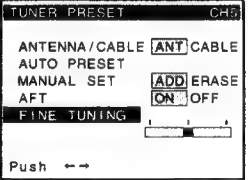


- 2
- Select the channel you want to fine-tune by pressing the number buttons and then ENTER.**



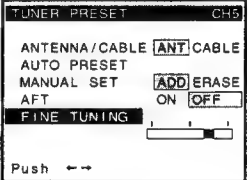
- 3
- Press the CURSOR (↑/↓) buttons to move the cursor (█) to FINE TUNING.**

The fine tuning meter appears.



- 4
- Press the CURSOR (←/→) buttons to get a clearer picture, then press EXECUTE.**

Note that the AFT setting switches to OFF.



Setting up VCR Plus+

Example of "PlusCode"

				PlusCode
5:30	14	MOVIE — Musical (2hrs.)	33044	
	2	SPORT — Golf (1hr. 25min.)	42060	
	CNN	— WS 9974		
6:30	2 3 4	DRAMA — Comedy (2hrs.)	17390	
	5	SCIENCE AND TECHNOLOGY (1hr. 15min.)	73457	

Example of "Channel Line-up Chart"

BLE TV	Guide channel number
A&E Arts & Entertainment Network	39
AMC American Movie Classics	35
BRV Bravo (program only)	54
CNN Cable News Network	42
CSP C.SPAN	28
DIS The Disney Channel	53
DSC The Discovery Channel	37
ESN ESPN	34
FAM The Family Channel	47
HBO Home Box Office	33
LIF Lifetime	46
MAX Cinemax	45
MSG Madison Square Garden Network	19
MTV Music Television	48
NIC Nickelodeon	38
SC Sports Channel	59
SCA Sports Channel America	70
SHO Showtime	41
TRS TRS Superstation	43
TMC The Movie Channel	58
TNN The Nashville Network	49
TNT Turner Network Television	52
USA USA Network	44

VCR Plus+ is a feature in Sony VCRs that simplifies the task of programming the VCR to make timer recordings.

How VCR Plus+ works

Whenever you want to record a TV program, all you need to do is look up the program's "PlusCode," a number assigned to each program that's published in the TV section of most newspapers, cable TV listings, and even TV GUIDE magazine. Then, just enter the PlusCode of the program you want and the VCR is automatically programmed to record that show. It's that simple. With VCR Plus+, you no longer have to go through the lengthy and often repetitive procedure of setting start and stop times, channel numbers, and dates. All this information is automatically sent to your VCR when you enter the program's PlusCode.

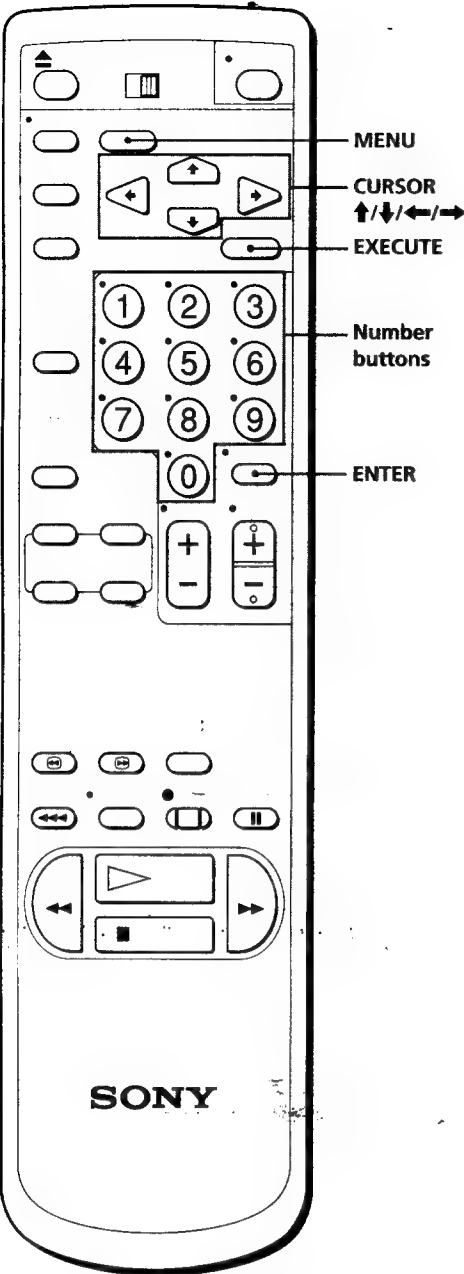
How to set up your VCR

Setting up your VCR involves coordinating the TV channel number (the number you turn to on your TV or VCR to watch a program) with the guide channel (the number that's assigned to that channel in your program guide). To get the guide channel numbers, find the "Channel Line-up Chart" in the program guide for your area that features VCR PlusCodes. It usually looks like the example on the left.

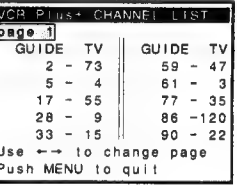
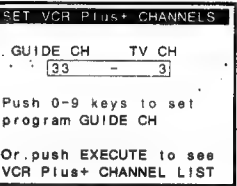
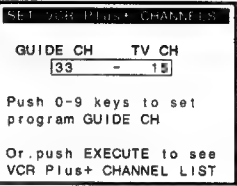
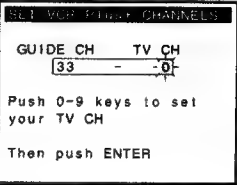
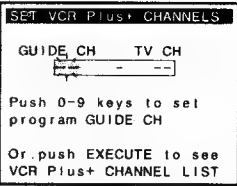
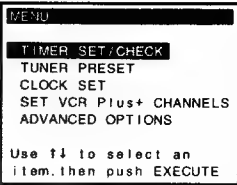
For each channel your VCR receives, use the Channel Line-up Chart to check that the channel numbers match. For example, if HBO is listed in the Channel Line-up Chart on channel 33, and your VCR receives HBO on channel 15, you need to coordinate these numbers using the following procedure. For channels in which the numbers are the same (for example, if your VCR receives HBO on channel 33, and the guide channel number is 33), you can skip this procedure.

(continued)

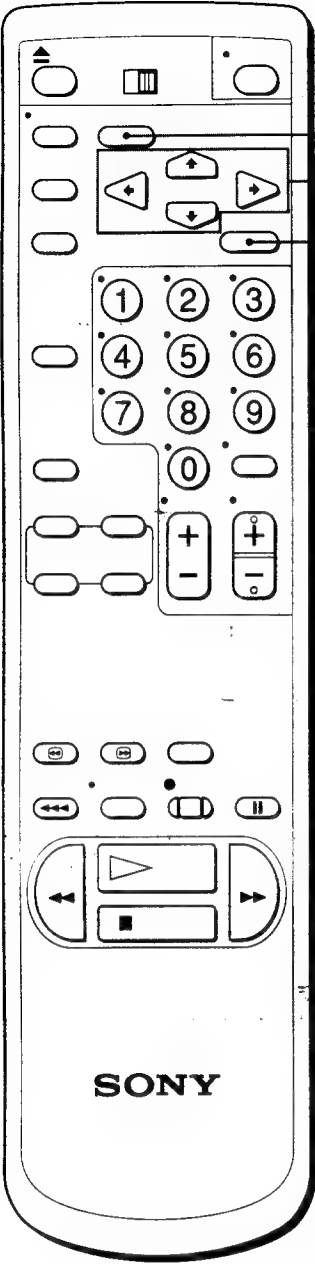
Setting up VCR Plus+
(continued)



- 1 Press MENU.**
The main MENU appears on the TV screen.
- 2 Press the CURSOR (↑/↓) buttons to move the cursor (█) to SET VCR Plus+ CHANNELS, then press EXECUTE.**
The SET VCR Plus+ CHANNELS menu appears and the GUIDE CH column is flashed.
- 3 Enter the channel number assigned in the program guide using the number buttons, and press ENTER.**
The TV CH column is highlighted.
- 4**
- If you made hookup 1 or 2, enter the actual number on your TV (and VCR) and press ENTER.
 - If you made hookup 3, enter the cable box output channel (usually 2, 3, or 4) and press ENTER.
 - If you made hookup 4, enter the actual number on your TV (and VCR) for an unscrambled channel and press ENTER. For a scrambled channel, enter the cable box output channel (usually 2, 3, or 4) and press ENTER.
- 5 Repeat steps 3 and 4 for each channel whose numbers don't match.**
- 6 When you have set all channels, press EXECUTE to confirm your channel settings.**
- 7 When you've finished, press MENU to exit.**



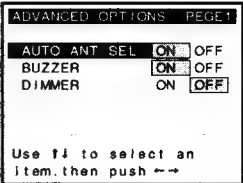
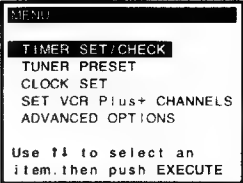
Using the ADVANCED OPTIONS



MENU
CURSOR
↑/↓/←/→
EXECUTE

The ADVANCED OPTIONS allows you to make a number of optional setup choices. For a list of menu choices, see the table on the following page.

- 1 Press MENU.**
The main MENU appears on the TV screen.
- 2 Press the CURSOR (↑/↓) buttons to move the cursor (█) to ADVANCED OPTIONS, then press EXECUTE.**
The ADVANCED OPTIONS menu appears on the TV screen.
- 3 Press the CURSOR (↑/↓) buttons to move the cursor (█) to the desired menu choice.**
- 4 Set the item to the desired setting using the CURSOR (←/→) buttons.**
- 5 Press EXECUTE to return to the original screen.**



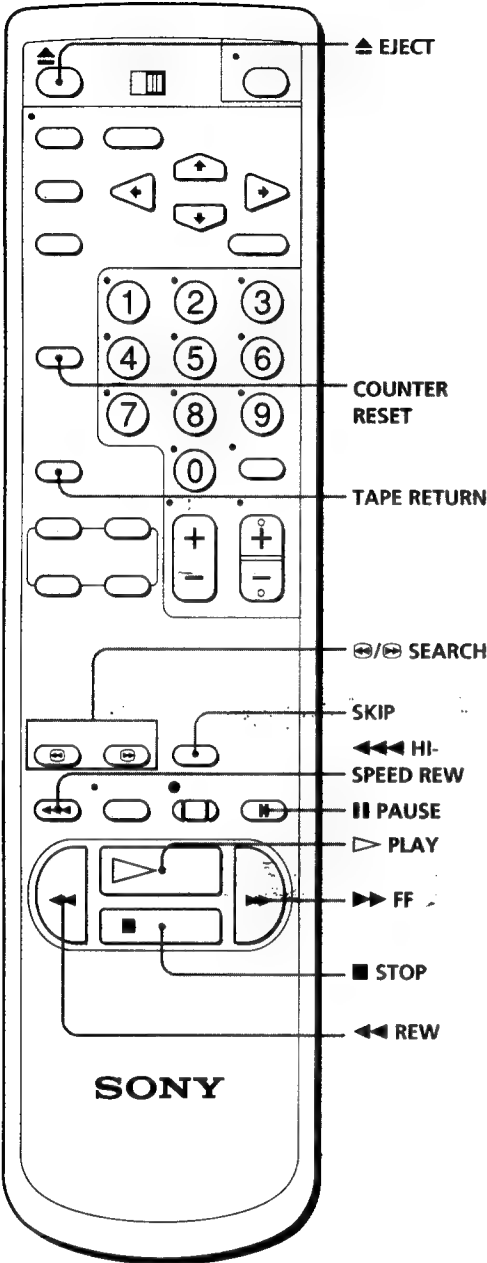
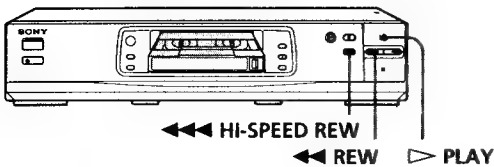
Menu choices

Initial settings are indicated in bold letters.

Menu option	Set this option to
AUTO ANT SEL	<ul style="list-style-type: none">• ON if your TV is connected only to VHF/ UHF OUT on the VCR. To play a tape, set the TV to the VCR channel (channel 3 or 4)• OFF if your TV is connected to both VHF/ UHF OUT and LINE OUT on the VCR. To play a tape, set the TV to the VCR input.
BUZZER	<ul style="list-style-type: none">• ON to sound the beep when you operate incorrectly.• OFF not to sound the beep.
DIMMER	<ul style="list-style-type: none">• ON to dim the VCR display.• OFF to brighten it.

Basic Operations

Playing a tape



Tip

- When rewinding at high speed, you will not see the time counter. After the tape is rewound to the beginning, the time counter displays "0H00M00S."

This section shows you how to play back a video tape.

- 1 Turn on your TV and tune in to the VCR:**
- If the TV is connected to the VCR using the audio/video cable, set the TV to video input.
 - If the TV is connected to the VCR using only the antenna cable, set the TV to the VCR channel.

- 2 Insert a tape.**
- The VCR turns on automatically.

- 3 Press \triangleright PLAY to start playing.**
- When the tape reaches the end, the VCR automatically rewinds it to the beginning. (The power remains on.)

Additional tasks

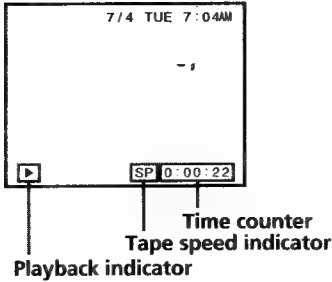
To	Press
Stop play	■ STOP
Pause play	⏸ PAUSE
Resume play after pause	⏸ PAUSE or \triangleright PLAY
Search forward	⏭ SEARCH during playback
Search backward	⏮ SEARCH during playback
Fast-forward the tape	⏩ FF during stop
Rewind the tape	⏮ REW during stop
Rewind the tape at high speed	⏮⏮ HI-SPEED REW
Eject the tape	⏏ EJECT
Skip a scene	SKIP during playback Pressing once skips about 30 seconds.
Replay a scene	COUNTER RESET first during playback when you come to a scene you want to replay later. When you are ready to replay the scene, press ■ STOP. Then press TAPE RETURN and \triangleright PLAY in quick succession.
Rewind and automatically restart play	\triangleright PLAY <u>on the VCR</u> during stop while pressing down ⏮ REW or ⏮⏮ HI-SPEED REW <u>on the VCR</u> .

Notes

- When a tape is reinserted, the counter returns to "0H00M00S."
- The counter will not work on unrecorded tape portions.
- During LP playback, the picture may be distorted; however, the VCR is not malfunctioning.

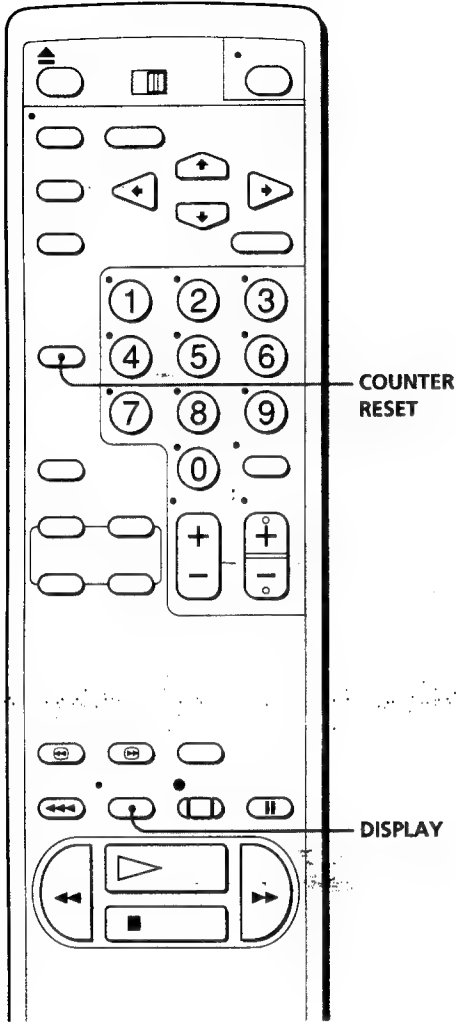
Displaying the time counter

Press DISPLAY to turn the display on or off.

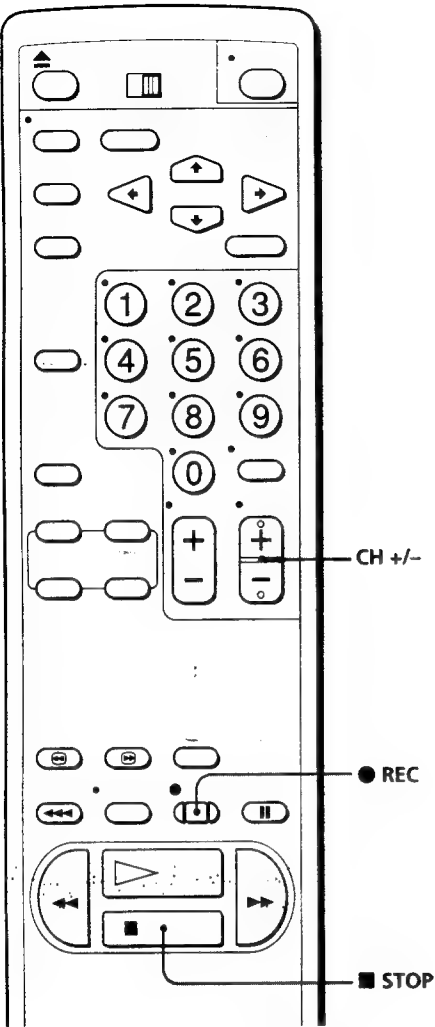


Using the time counter

At the point on a tape that you want to find later, press COUNTER RESET to reset the counter to "0H00M00S." When you rewind or advance the tape to this point, refer to the counter.



Recording TV programs



This section shows you how to record TV programs in the most basic way: manual recording. With manual recording, you start the VCR recording when the program begins, then stop it when the program ends. The VCR also provides the following ways of recording:

- Manual start, automatic stop recording—"Recording using the quick timer" (page 29)
- Automatic start and stop recording—"Recording TV programs using the timer" (page 30)
- Automatic start and stop recording using the "PlusCode"—"Recording TV programs using VCR Plus+" (page 33)

1 Turn on your TV and tune in to the VCR:

- If the TV is connected to the VCR using the audio/video cable, set the TV to video input.
- If the TV is connected to the VCR using only the antenna cable, set the TV to the VCR channel.

If using a cable box, turn it on.

2 Insert a tape with its safety tab slid back to hide the red portion.

3 Select the desired channel by pressing CH +/-.



4 Start recording by pressing the ● REC button.

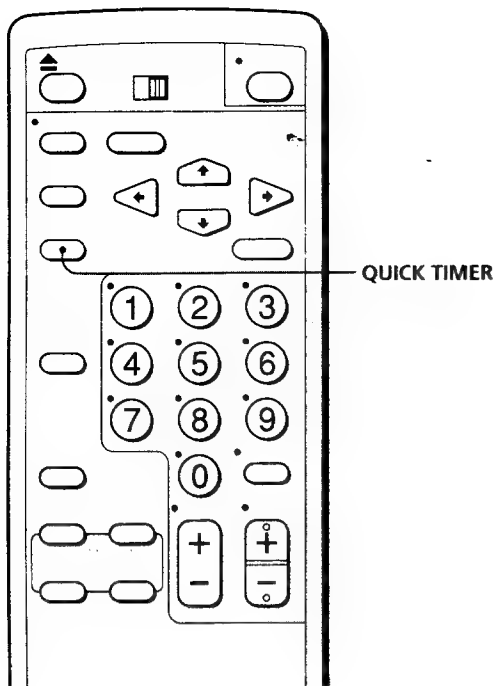
When the tape reaches the end, the VCR automatically rewinds it to the beginning.

Tip

- To select channels, you can also use the number buttons on the remote commander. Enter the desired channel number using the number buttons, then press ENTER.

To stop recording

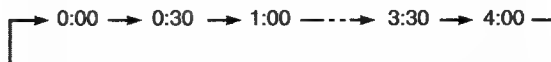
Press ■ STOP.



Recording using the quick timer

The quick timer enables you to record for a specified period of time in intervals of 30 minutes. Once you set the recording time, the VCR automatically stops recording at the end of that time. Before you begin, check that the clock is set correctly.

After you start recording, press QUICK TIMER until the desired duration appears in the display window. The TIMER REC indicator on the VCR lights up. Each press increases the recording duration in increments of 30 minutes as shown below.



While recording, the display decreases minute by minute to 0:00, then the VCR turns off automatically.

To stop recording

To stop quick-timer recording while the VCR is recording a program, press QUICK TIMER again to turn off the TIMER REC indicator on the VCR.

To extend the recording duration while recording

Press QUICK TIMER until the desired duration appears in the display window.

Tips

- The information displayed on the TV screen will not be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV. When using a cable box, make sure to leave it on.

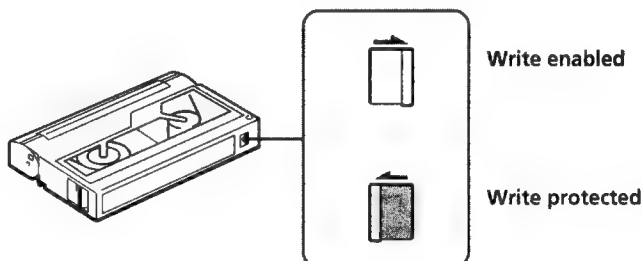
Notes

- If your tape ends during quick-timer recording, recording stops and the VCR turns off. The tape does not rewind automatically.
- If a power interruption occurs during quick-timer recording, recording stops and your VCR turns off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from that point.

Saving a recording

Video tapes have a safety tab to protect against accidental recording. To prevent accidental erasure of a recording, slide out the tab on the cassette so that the red portion is visible. A tape with its safety tab in this position is ejected if you try to record on it.

To record on a tape, slide the tab so that the red portion is not visible.

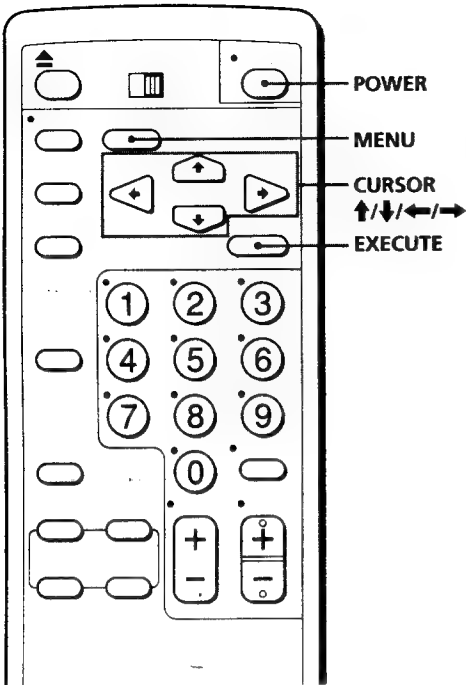


Watching a TV program while recording another

You can watch a TV program and record another at the same time.

- 1 If the TV is connected to the VCR using the audio/video cable, set the TV to TV input.
If the TV is connected to the VCR using only the antenna cable, press TV/VTR to turn off the VTR indicator in the display window.
- 2 Select the desired channel on the TV.

Recording TV programs using the timer

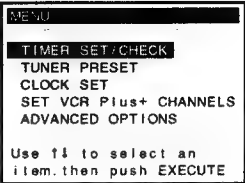


This section shows you how to let the VCR automatically start and stop recording TV programs. You can preset up to eight programs within a one month time frame. If VCR Plus+ is available in your area, see the section "Recording TV programs using VCR Plus+" on page 33 for easier timer recording.

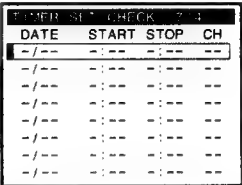
Before you start...

- Check that the clock is set correctly.
- Insert a tape with its safety tab slid to hide the red portion. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.
If using a cable box, turn it on.

1 Press MENU.

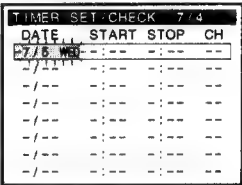
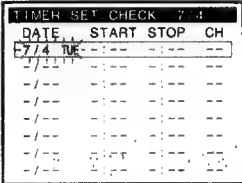


2 Press the CURSOR (up/down) buttons to move the cursor (blinking bar) to TIMER SET/CHECK, then press EXECUTE.



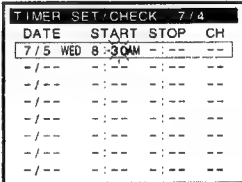
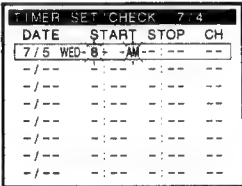
3 Set the date to start recording:

- 1 Press CURSOR right.
Make sure today's date is flashed. If it isn't, reset the clock to the correct time.
- 2 Press CURSOR up to set the month and date.
The day of the week is set automatically.
To record the same program every day or the same day once a week, press CURSOR down until the desired day appears.



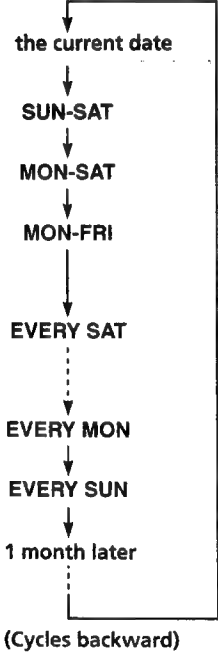
4 Set the time to start recording:

- 1 Press CURSOR right to flash the hour under "START," then press the CURSOR (up/down) buttons to set the hour.
- 2 Press CURSOR right to flash the minutes under "START," then press the CURSOR (up/down) buttons to set the minutes.



Tip

- Each time you press CURSOR in step 3-2, the indication changes as shown below.



5 Press **CURSOR →**, then set the time to stop recording in the same way.

TIMER SET/CHECK 7/4				
DATE	START	STOP	CH	
7/5 WED	8:30AM	9:00AM	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	

6 Press **CURSOR →**, then press the **CURSOR (↑/↓)** buttons to select the channel you want to record.

Only the channels preset in the VCR will appear. If using a cable box, the cable box channels appear.

TIMER SET/CHECK 7/4				
DATE	START	STOP	CH	
7/5 WED	8:30AM	9:00AM	30	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	

7 To confirm your program, press **CURSOR →**.

All the settings stop being flashed and the cursor (█) appears in the leftmost column.

To preset another timer setting, move the cursor to the next line using **CURSOR ↓** and repeat steps 2 to 6.

TIMER SET/CHECK 7/4				
DATE	START	STOP	CH	
7/5	8:30AM	9:00AM	30	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	
-/-	--	--	--	

8 After making the desired timer settings, press **EXECUTE**.

9 Press **POWER**.

The **TIMER REC** indicator lights up.

The VCR automatically turns off and stands by for recording. If using a cable box, leave it on.

The VCR automatically turns on and starts recording at the preset start time, and turns off at the preset stop time.


To stop recording while timer recording

Press **POWER** to turn off the **TIMER REC** indicator on the VCR.

Tips

- To change or correct a setting before confirming it, press **CURSOR →** to flash the item you want to change and reset it.
- To set the channel, you can also use **CH +/-** or number buttons.

Note

- If the  tape indicator in the display window flashes when you press **POWER** in step 9, check for one of the following causes:
 - no tape has been inserted,
 - the tape is at its end, or
 - the safety tab on the tape has been slid out to show the red portion.

Recording TV programs using the timer (continued)

To use the VCR while timer recording

You can do the following tasks during timer recording.

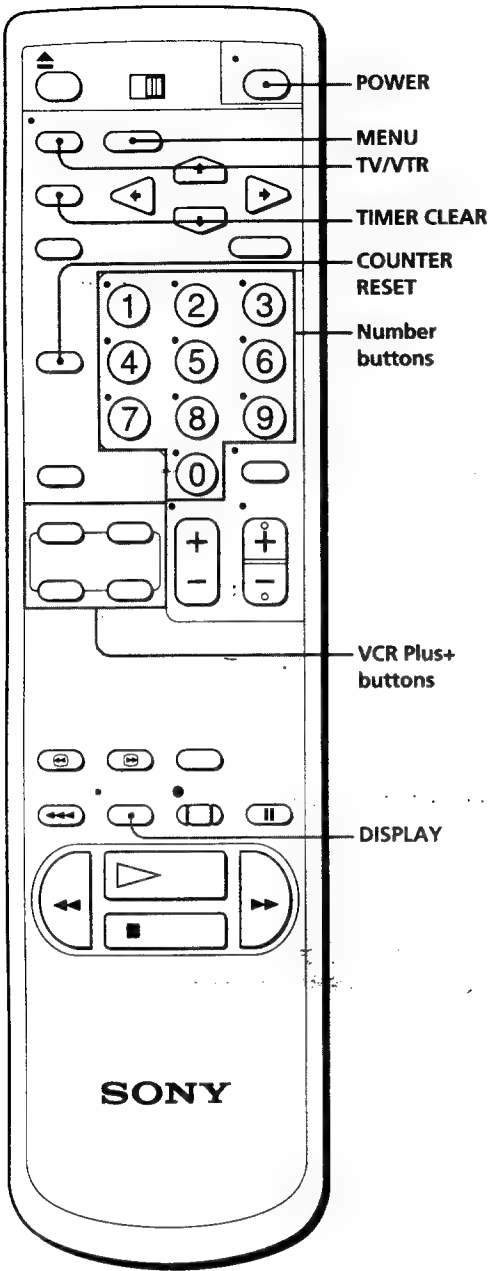
To	Press
Reset the counter to "0H00M00S"	COUNTER RESET
Display tape information on the TV screen	DISPLAY
Check the timer settings	MENU and select TIMER SET /CHECK
Watch another TV program	TV/VTR (See "Watching a TV program while recording another" on page 29.)

Using the VCR before timer recording begins

Press POWER to turn on the VCR. The TIMER REC indicator on the VCR goes off and the VCR is ready for use.

After using the VCR, press POWER again to turn on the TIMER REC indicator on the VCR. When using a cable box, leave it on. Remember to turn off the VCR before the time you've set the VCR to start recording, or the timer setting will be cancelled.

Recording TV programs using VCR Plus+

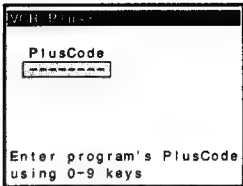


This section shows you another way of timer recording: recording using VCR Plus+. This allows you to record TV programs more easily. Just enter the program's "PlusCode," and the VCR will automatically record the program. You can preset up to eight programs within a one month time frame.

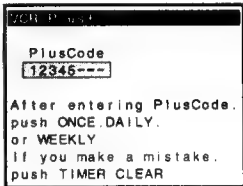
Before you start...

- Check that the clock is set correctly.
- Insert a tape with its safety tab slid back to hide the red portion. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.
If using a cable box, turn it on.

1 Press VCR Plus+.



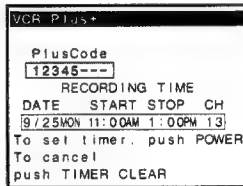
2 Enter the desired program's PlusCode using the number buttons.
If you make a mistake, press **TIMER CLEAR** and enter the PlusCode again.



3 Press ONCE, DAILY or WEEKLY according to the following:

To record the program	Press
Only once	ONCE
Monday to Friday at the same scheduled time	DAILY
Every week at the same scheduled time	WEEKLY


The recording information appears on the TV screen: date, program start and stop times, channel number and tape speed. Check that the information is correct. If it is not, press **TIMER CLEAR** to cancel. To preset another timer setting, repeat steps **1** to **3**.



(continued)

Recording TV programs using VCR Plus+ (continued)

Notes

- You cannot set VCR Plus+ in the following cases:
 - When the VCR is turned off.
 - While recording using the timer or quick timer.
- The timer will not accept settings in the following cases:
 - When you select DAILY for a Saturday and Sunday program.
 - When you select DAILY or WEEKLY for a program more than seven days in advance.
 - When you enter the PlusCode of a program that has already ended.
- If the  tape indicator in the display window flashes when you press POWER in step 4, check for one of the following causes:
 - no tape has been inserted,
 - the tape is at its end, or
 - the safety tab on the tape has been slid out to show the red portion.

- 4 Press POWER.
- The TIMER REC indicator lights up. The VCR automatically turns off and stands by for recording. If using a cable box, leave it on.
- The VCR automatically turns on, records the program and turns off.

To stop recording while recording using VCR Plus+ Press TIMER CLEAR to turn off the timer recording using VCR Plus+.

To use the VCR while recording using VCR Plus+ You can do the following tasks while recording using VCR Plus+.

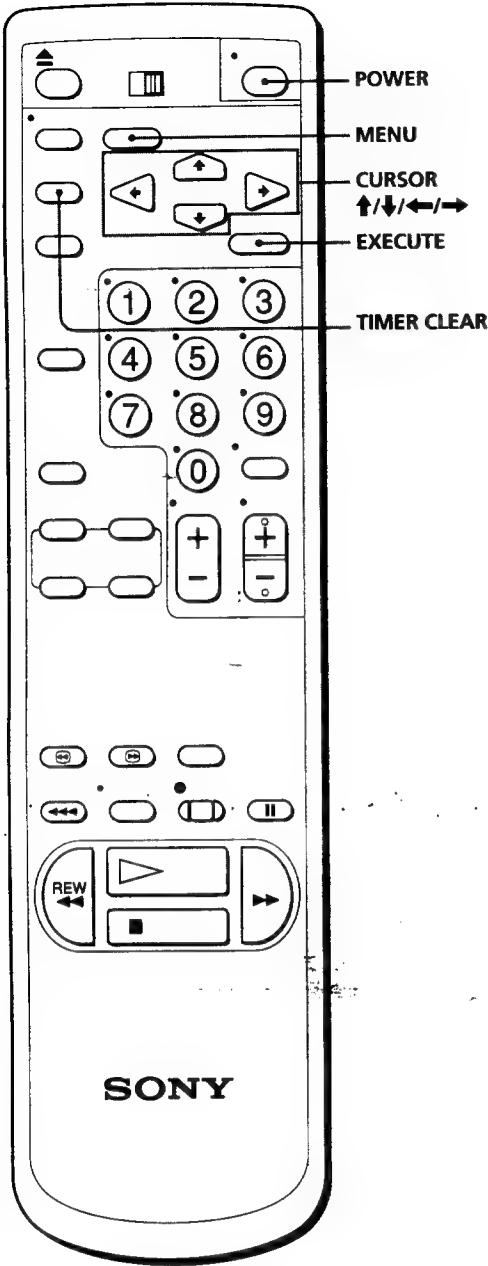
To	Press
Reset the counter to "0H00M00S"	COUNTER RESET
Display tape information on the TV screen	DISPLAY
Check the timer settings	MENU and select TIMER SET/CHECK
Watch another TV program	TV/VTR (See "Watching a TV program while recording another" on page 29.)

Using the VCR before timer recording begins

Press POWER to turn on the VCR. The TIMER REC indicator on the VCR goes off and the VCR is ready for use.

After using the VCR, press POWER again to turn on the TIMER REC indicator on the VCR. When using a cable box, leave it on. Remember to turn off the VCR before the time you've set the VCR to start recording, or the timer setting will be cancelled.

Checking/changing/ cancelling timer settings

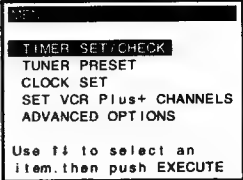


This section shows you how to check, change and cancel the timer settings after you've stored them in the VCR.

- Before you start...**
- Turn on your TV and tune in to the VCR.

1 Press POWER to turn on the VCR.

2 Press MENU.



3 Press the CURSOR (↑/↓) buttons to move the cursor (█) to TIMER SET/CHECK, then press EXECUTE.

DATE	START	STOP	CH
7/5	8:30AM	9:00AM	30
7/12WED	1:15PM	2:00PM	14
MON - FRI	11:00AM	12:00PM	LINE1
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-

- 4 Check the timer settings:**
- If you do not want to change or cancel the settings, press EXECUTE, then POWER to return to recording standby.
 - If you want to change or cancel the settings, press the CURSOR (←/→) buttons to move the cursor (█) to the setting you want to change or cancel.

DATE	START	STOP	CH
7/5 WED	8:30AM	9:00AM	30
7/12	1:15PM	2:00PM	14
MON - FRI	11:00AM	12:00PM	LINE1
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-
-/-	-/-	-/-	-/-

- 5 Change or cancel the timer setting:**
- To change the setting, press the CURSOR (←/→) buttons to flash the item you want to change, and reset it using the CURSOR (↑/↓) buttons. Then, press CURSOR → to move the cursor to the leftmost column.
 - To cancel the setting, press TIMER CLEAR.

(continued)

Checking/changing/cancelling
timer settings (continued)

- 6 Press EXECUTE.
- The VCR returns to the original screen. If there are any other timer settings left in the TIMER SET/CHECK menu, press POWER to return to recording standby.

To check the timer settings during timer recording
Press MENU and select TIMER SET/CHECK. After checking, press EXECUTE to turn off the display.

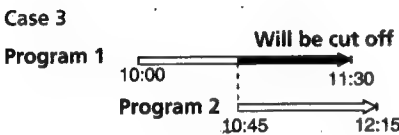
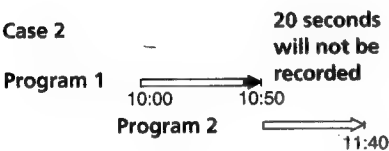
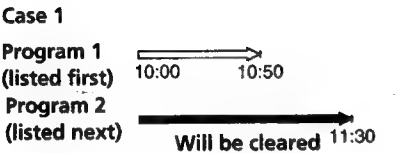
When the timer settings overlap

The VCR will not record overlapping programs. If any of your timer settings overlap, change the settings.

- Case 1: If you preset two programs to start recording at the same time...
- The program listed first in the TIMER SET/CHECK menu has priority over the other program. The timer setting of the lower priority program will be erased from the TIMER SET/CHECK menu when the first program begins recording.

- Case 2: If you preset program 2 to start recording at the same time you preset program 1 to finish recording...
- The last 20 seconds of program 1 will not be recorded because the VCR will enter recording pause for program 2 before program 1 is finished.

- Case 3: If you preset program 2 to start recording before program 1 is finished recording...
- Program 2 will start recording before program 1 has finished.

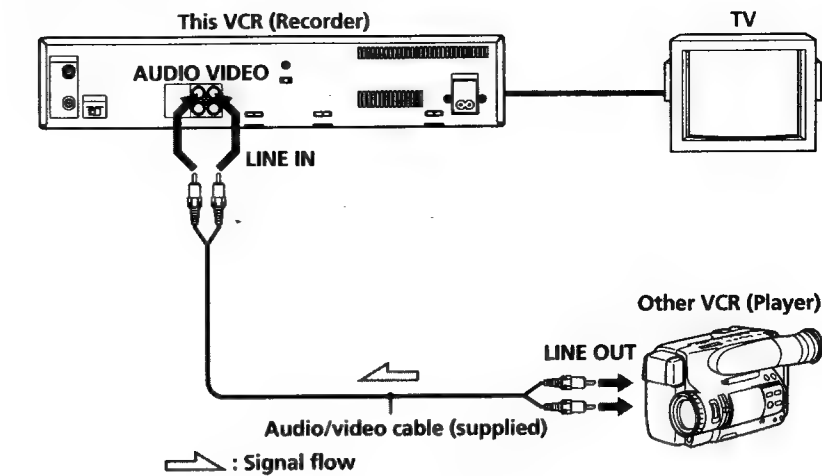


Additional Operations
Editing with another
VCR

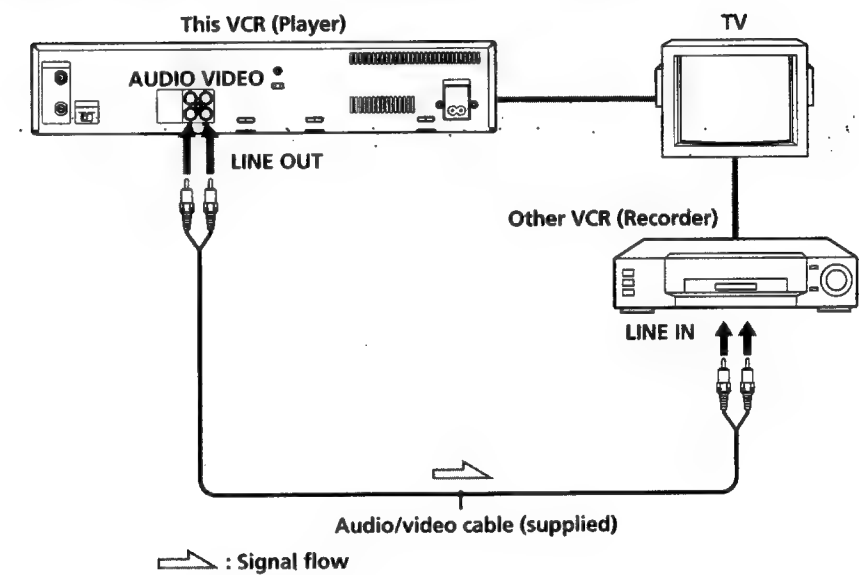
- Notes**
- Make sure to connect the plugs to jacks of the same color.
 - If you connect both the LINE IN and LINE OUT jacks of this VCR to the other VCR, select the input correctly to prevent a humming noise.

This section shows you how to edit to or from another VCR or camcorder. You can make a copy of a tape using this VCR for recording or playback.

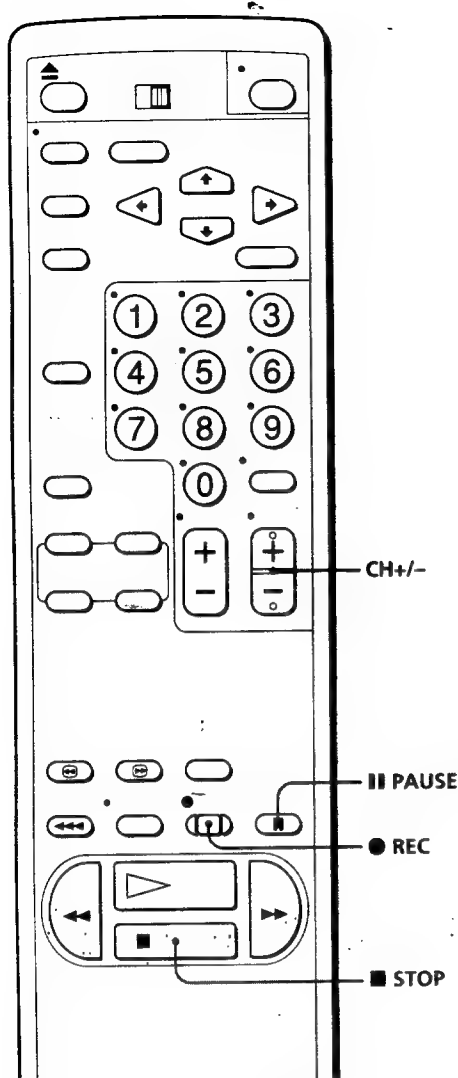
How to hook up to record on this VCR



How to hook up to record to another VCR



Editing with another VCR (continued)



Note

- Make sure that the safety tab is in the correct position. If the playback VCR is a VHS model, make sure that the safety tab on the source tape has been removed.

Tips

- To make your editing more precise, release the VCRs from pause by pressing **II PAUSE** buttons on the VCRs, not on the remote commander.
- To cut at unwanted events while editing, press **II PAUSE** on this VCR when an unwanted scene begins, when it ends, press **II PAUSE** again to resume recording (assemble editing).

Operation (when recording on this VCR)

Before you start editing, press CH+/- to display "L" in the display window.

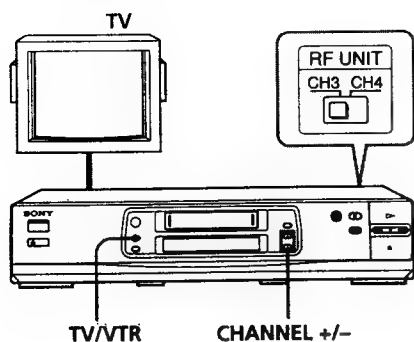
- 1** Insert a source tape with its safety tab slid out to show the red portion into the other (playback) VCR. Search for the point to start playback and set it to playback pause.
- 2** Insert a tape for recording into this (recording) VCR. Search for the point to start recording and press **II PAUSE**.
- 3** Press **● REC** on this VCR and set it to recording pause mode.
- 4** Press the **II PAUSE** button on both VCRs to start editing
For best results, press the pause button on the playback VCR just before pressing **II PAUSE** on this VCR.

To stop editing

Press the **■ STOP** buttons on both VCRs.

Additional Information

General setup information

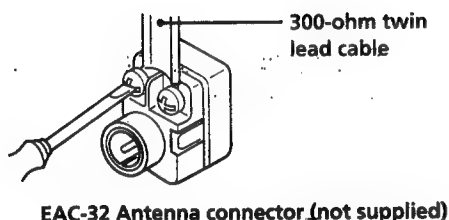


Setting the RF unit

When connecting the VCR to the TV using only the antenna cable, you must set the RF UNIT switch on the rear of the VCR so that the TV can receive the correct signal from the VCR.

If you connect the VCR to the TV using the supplied audio/video cable, you can skip this step.

- 1 Set the RF UNIT switch on the rear of the VCR to CH3 (channel 3) or CH4 (channel 4), whichever channel is not used in your area. If both are used, set the switch to either channel.
- 2 Press POWER to turn on the VCR.
- 3 Press TV/VTR to turn on the VTR indicator in the VCR's display window.
- 4 Press CHANNEL +/- to display a channel number in the display window. Select an active channel number in your area.
- 5 Turn on your TV and set it to the channel you selected in step 1 (channel 3 or 4).
The selected TV channel broadcast appears on the TV screen. If the channels change when you press CHANNEL +/-, you have made the correct setting.
Whenever you use the VCR, set the TV to the channel selected in step 1.



Attaching the external antenna connector

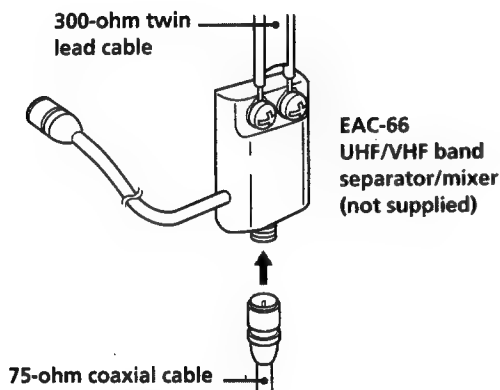
When using a 300-ohm twin lead cable for VHF/UHF antenna, use the EAC-32 antenna connector (not supplied) to connect the antenna to the VCR.

- 1 Loosen the screws on the antenna connector.
- 2 Wind the twin leads around the screws on the antenna connector.
- 3 Retighten the screws.

Attaching an UHF/VHF band mixer

When using both a 75-ohm coaxial cable and a 300-ohm twin lead cable for VHF/UHF antenna, use the EAC-66 UHF/VHF band separator/mixer (not supplied) to connect the antenna to the VCR.

- 1 Loosen the screws on the mixer.
- 2 Wind the twin leads around the screws on the mixer.
- 3 Retighten the screws.
- 4 Connect the 75-ohm coaxial cable to the mixer.

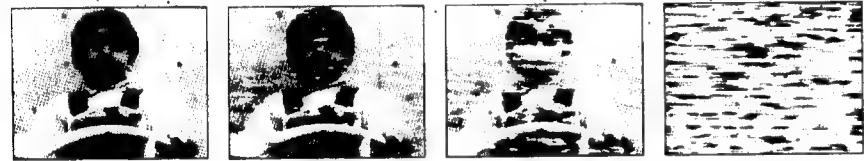


Troubleshooting

	Symptom	Remedy
Power	The POWER switch does not function.	<ul style="list-style-type: none">• Connect the AC power cord securely.• Make sure the VCR is not standing by for timer recording.
Clock	The clock has stopped and "--:--" lights in the display window.	<ul style="list-style-type: none">• The clock stops if the VCR is disconnected from the wall outlet for more than an hour. Reset the clock (and timer).
Playback	The playback picture does not appear on the TV screen.	<ul style="list-style-type: none">• Make sure the TV is set to the channel for the VCR, or set it to video input.
	The picture is not clear.	<ul style="list-style-type: none">• The video heads are dirty (see below). Clean the video heads using a Sony video head cleaning cassette. If this cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony dealer (a standard service charge will be required). Do not use a commercially available wet-type cleaning cassette, as it may damage the video heads.• The video heads may have to be replaced. Consult your local Sony dealer for more information.
	The picture has no sound.	<ul style="list-style-type: none">• The tape is defective. Use a new tape.

Symptoms caused by contaminated video heads

- Normal picture
- Rough picture
- Unclear picture
- No picture (or black & white screen appears)



initial

terminal

	Symptom	Remedy
Recording	A TV program does not appear on the TV screen.	<ul style="list-style-type: none"> • Make sure the TV is set to the channel for the VCR, or set it to video input.
	TV reception is poor.	<ul style="list-style-type: none"> • Adjust the TV antenna.
	The tape is ejected when you press the ● REC buttons.	<ul style="list-style-type: none"> • Check that the safety tab has not been slid out to show the red portion underneath.
	Nothing happens when you press the ● REC or POWER buttons.	<ul style="list-style-type: none"> • Make sure the tape has been wound to the beginning. • Select the correct source with CH+/- . Select a channel number when recording TV programs.
Timer recording	The timer does not operate.	<ul style="list-style-type: none"> • Check that the clock is set. The clock and timer stop if the VCR is disconnected from the wall outlet for more than an hour. • Make sure a tape has been inserted. • Check that the safety tab has not been slid out to show the red portion underneath. • Make sure the tape has been wound to the beginning. • Make sure a program has been set for timer recording. • Make sure the programs on your timer settings have not already ended. • Check that the cable box is turned on.
Others	The beep sounds.	<ul style="list-style-type: none"> • Make sure you are operating correctly according to the instruction manual.
	A tape cannot be inserted.	<ul style="list-style-type: none"> • Check that a tape isn't already in the tape compartment.
	The remote commander does not function.	<ul style="list-style-type: none"> • Make sure you are pointing the remote commander at the remote sensor on the VCR. • Replace all the batteries in the remote commander with new ones if they are weak.
	The VCR needs to be cleaned.	<ul style="list-style-type: none"> • Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

Specifications

System

- Format**
8 mm NTSC standard
- Video recording system**
Rotary two-head helical scanning
FM system
- Audio recording system**
Standard: Rotary head FM system
(2 channels)
- Video signal**
NTSC color, EIA standards
- Usable cassette**
8 mm video format cassettes
- Tape speed**
SP: 19/32 inches/s (14.3 mm/s)
LP: 5/16 inches/s (7.2 mm/s)
(LP is for playback only)
- Maximum recording/playback time**
SP: 2 hrs., LP: 4 hrs. (using a Sony
P6-120 cassette)
SP: 3 hrs., LP: 6 hrs. (using a Sony
P6-180 cassette)
(LP is for playback only)
- Fast-forward/rewind time**
Approx. 2 min. 15 sec.
Approx. 1 min. (high-speed
rewind)
(using a Sony P6-120 cassette)
- Channel coverage**
VHF 2 to 13
UHF 14 to 69
CATV A-8 to A-1, A to W, W+1 to
W+84
- RF output channel**
VHF channel 3 or 4

Inputs and outputs

- Antenna**
75-ohm antenna terminal for
VHF/UHF
- LINE IN**
VIDEO IN (phono jack)
Input signal: 1 Vp-p, 75 ohms
(unbalanced), sync negative
AUDIO IN (phono jack)
Input level: 327 mVrms
Input impedance: more than
47 kilohms

LINE OUT

- VIDEO OUT (phono jack)
Output signal: 1 Vp-p, 75 ohms
(unbalanced), sync negative
AUDIO OUT (phono jack)
Output level: 327 mVrms
Output impedance: less than
10 kilohms

Timer section

- Clock**
Quartz locked
- Timer indication**
12-hour cycle
- Timer setting**
Only for recording 8 programs in
one calendar month max.
- Power back-up**
Built-in self-charging capacitor
Back-up duration: up to one hour
at one time

General

- Power requirements**
120 V AC, 60 Hz
- Power consumption**
26 W (max.)
- Operating temperature**
41°F to 104°F (5°C to 40°C)
- Storage temperature**
-4°F to 140°F (-20°C to 60°C)
- Dimensions**
Approx. 17 × 3 1/2 × 12 3/8 inches
(w/h/d)
(Approx. 430 × 86 × 313 mm)
including projecting parts and
controls
- Mass**
Approx. 8 lb 10 oz (3.9 kg)

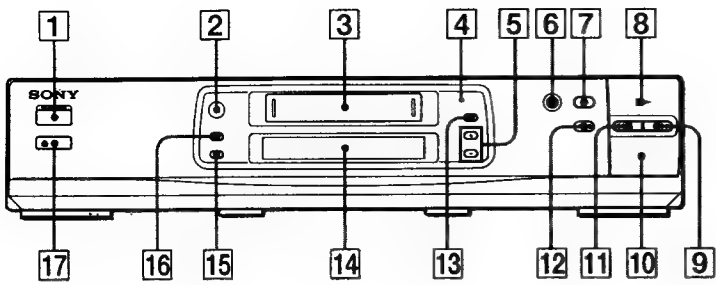
Supplied accessories

- Remote commander (1)
Size AA (R6) batteries (2)
75-ohm coaxial cable with F-type
connectors (1)
Audio/video cable (2 phono plug to 2
phono plug) (1)
AC power cord (1)

Design and specifications are subject to
change without notice.

Index to parts and controls

Front panel



- 1

POWER switch/indicator
- 2

Remote sensor (6)
- 3

Cassette compartment
- 4

TIMER REC indicator
- 5

CHANNEL +/- button
- 6

● REC (record) button (28, 38)
- 7

|| PAUSE button (26, 38)
- 8

▷ PLAY button/indicator (26)
- 9

▶▶ FF button/indicator (26)
- 10

■ STOP button (26, 28, 38)
- 11

◀◀ REW button/indicator (26)
- 12

◀◀◀ HI-SPEED REW button (26)
- 13

QUICK TIMER button (29)
- 14

Display window (44)
- 15

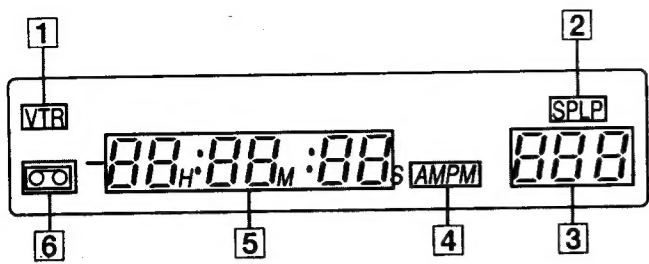
COUNTER RESET button (27)
- 16

TV/VTR button (20, 29, 39)
- 17

⏏ EJECT button (26)

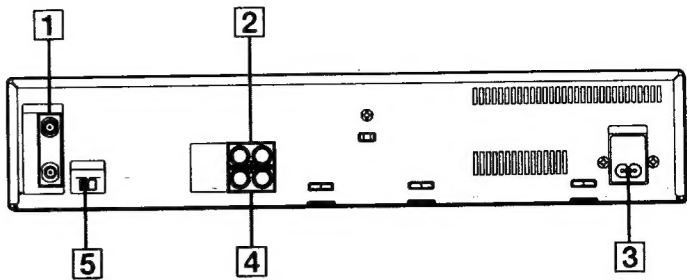
Index to parts and controls
(continued)

Front panel display window



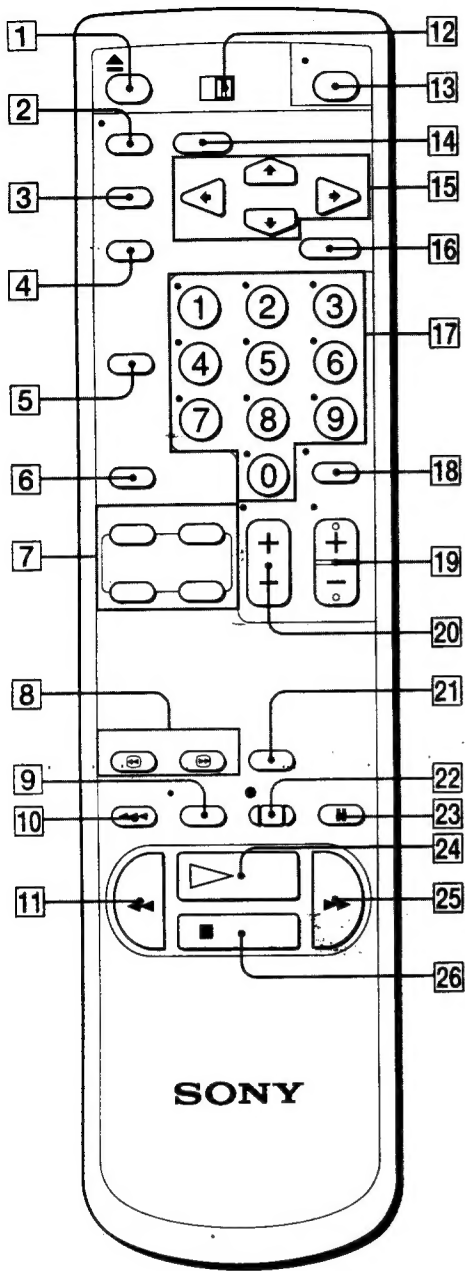
- 1 VTR indicator
- 2 SP/LP (tape speed) indicators
- 3 Channel number/input mode indicator (28)
- 4 AM/PM indicator
- 5 Time counter/recording time/clock
- 6 Tape indicator

Rear panel



- 1 VHF/UHF connectors (10, 12, 14, 16)
- 2 LINE IN AUDIO/VIDEO jacks (8, 37)
- 3 AC IN connector
- 4 LINE OUT AUDIO/VIDEO jacks (8, 37)
- 5 RF UNIT switch (11, 13, 15, 17, 39)

Remote commander



- 1 EJECT button (26)
- 2 TV/VTR button (29, 39)
- 3 TIMER CLEAR button (33, 35)
- 4 QUICK TIMER button (29)
- 5 COUNTER RESET button (26, 27, 34)
- 6 TAPE RETURN button (26)
- 7 VCR Plus+ buttons (33)
VCR Plus+ button
ONCE button
DAILY button
WEEKLY button
- 8 ◀/▶ SEARCH buttons (26)
- 9 DISPLAY button (27, 33)
- 10 ◀◀◀ HI-SPEED REW button (26)
- 11 ◀◀ REW button (26)
- 12 TV/VTR remote control switch (6)
- 13 POWER button
- 14 MENU button (19)
- 15 CURSOR (↑/↓/←/→) buttons (19)
- 16 EXECUTE button (19)
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- 20 VOL (volume) +/- buttons
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Quick reference to using the VCR

Hookup 1

To play a tape

- 1 If you made A/V connections, set the TV to video input.
If you didn't use A/V hookup:
 - Turn on the cable box.
 - Set the cable box to channel 3 or 4.
 - Set the TV to the output channel of the cable box (usually 2, 3 or 4).
- 2 Insert a tape and press ▷ PLAY.

To record a program

- 1 Press VCR Plus+ on the remote commander.
- 2 Enter the program's PlusCode number.
- 3 Press ONCE, DAILY, or WEEKLY.
- 4 Insert a tape.
- 5 Press

To watch TV

- 1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Select the channel with your cable box (if you have one) or with your TV.

Hookup 2

To play a tape

- 1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections.)
- 2 Insert a tape and press ▷ PLAY. If there's no picture on your TV, press the VCR's TV/VTR button until the VTR indicator comes on in the display window.

To record a program

- 1 Press VCR Plus+ on the remote commander.
- 2 Enter the program's PlusCode number.
- 3 Press ONCE, DAILY, or WEEKLY.
- 4 Insert a tape.
- 5 Press

To watch TV

- 1 Turn off the VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Set the TV to the channel you want to watch.

Hookup 3

To play a tape

- 1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections.)
- 2 Insert a tape and press ▷ PLAY.

To record a program

- 1 Turn on the cable box.
- 2 Set the cable box to the channel you want to record.
- 3 Press VCR Plus+ on the remote commander.
- 4 Enter the program's PlusCode number.
- 5 Press ONCE, DAILY, or WEEKLY.
- 6 Insert a tape.
- 7 Press
- 8 Leave the cable box on.

To watch TV

- 1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Turn on your cable box.
- 3 Set the TV to the cable box output channel (usually 2, 3, or 4).
- 4 Set the cable box to the channel you want to watch.

Hookup 4

To play a tape

- 1 Set the TV to channel 3 or 4 (or to video input, if you made A/V connections).
- 2 Insert a tape and press ▷ PLAY.

To record an unscrambled channel using the timer

- 1 Set the A/B switch to "A."
- 2 Press VCR Plus+ on the remote commander.
- 3 Enter the program's PlusCode number.
- 4 Press ONCE, DAILY, or WEEKLY.
- 5 Insert a tape.
- 6 Press

To record a scrambled channel using the timer

- 1 Set the A/B switch to "B."
- 2 Turn on the cable box.
- 3 Set the cable box to the channel you want to record.
- 4 Press VCR Plus+ on the remote commander.
- 5 Enter the program's PlusCode number.
- 6 Press ONCE, DAILY, or WEEKLY.
- 7 Insert a tape.
- 8 Press
- 9 Leave the cable box on.

To watch TV

- 1 Turn off your VCR, or press the VCR's TV/VTR button until the VTR indicator in the display window goes off.
- 2 Set the A/B switch to "B."
- 3 Turn on your cable box.
- 4 Set the TV to the cable box output channel (usually 2, 3 or 4).
- 5 Set the cable box to the channel you want to watch.

If you have any questions about this product, you may call: **Sony Customer Information Center** 1-800-222-SONY (7669)
or write to: **Sony Customer Information Center** Sony Drive, Mail Drop #T1-11, Park Ridge, NJ 07656

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